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Mississippi Agricultural and Mechanical College reports

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Report of the Trustees, President and other Officers of the Agricultural and Mechanical College of Mississippi, from the organization of college to Dec. 1st, 1883

Biennial report of the Trustees, President and other Officers of the Agricultural and Mechanical College of Mississippi, 1884-'85-1890 and 1891

Biennial report of the Trustees, President and other Officers of the Mississippi Agricultural & Mechanical College, 1892 and 1893-<1894-1896>

LLMC 01-490t

A. & M. COLLEGE.

BIENNIAL REPORT

—OF THE—

Trustees, President and Other Officers

—OF THE—

Agricultural and Mechanical College

OF MISSISSIPPI,

FOR THE YEARS 1884-'85.

PUBLISHED FOR THE INFORMATION OF THE LEGISLATURE AND
THE PUBLIC.

JACKSON, MISS.;
CLARION STEAM PUBLISHING ESTABLISHMENT.
1885.

REPORT OF EXECUTIVE COMMITTEE.

Hon. Robert Lowry, Governor and Ex-officio President of Board of Trustees:

In transmitting the accompanying reports of the work and progress of the Agricultural and Mechanical College, we congratulate, through you, the people of the State upon the fact that they have an institution occupying the front rank among the Agricultural Colleges of the country, and one of the very few that have held strictly to the purposes for which they were established. Although there are many Agricultural Colleges in name, if not in reality, it should be gratifying to all true Mississippians to know ours is classed as one of the best three, and that the management of older institutions is being reorganized and modeled after ours. As ours is strictly an agricultural State, the importance of developing that interest cannot be too highly appreciated. The enthusiasm of the faculty and students on this subject, and the signs of improvement on the farms surrounding the College should convince the most skeptical of the good work being done. We hope to see the influence of the College farm extend until it reaches every part of the State. As a means of hastening this desirable end, the instruction by the Faculty is not confined to the class-room. They go to different parts of the State, meet the farmers and discuss questions in which they are most interested. In this way the wants and difficulties of the farmers are made known, and suggestions as to the best means of overcoming them are heard from both a scientific and practical standpoint.

As an additional evidence of progress, there are young men, graduates of the College, now filling positions there, for which before its establishment, there was not a young man in the State qualified. Yours respectfully,

H. M. Street,
W. B. Montgomery,
H. A. Minor,
Executive Committee.

PRESIDENT'S REPORT TO HON. BOARD OF TRUSTEES.

To the Honorable Board of Trustees Agricultural College of Mississippi:

GENTLEMEN—The Act of Congress donating public lands to the several States, which may provide colleges for the "benefit of agriculture and the mechanic arts," requires, that there shall be an annual report made of the progress of these colleges. Two years ago, we made our first report, covering the first three years of the College, to comply with this law, and also for the information of our Legislature, which meets biennially. We derive our main support from the State, as the interest on the "donated land scrip fund" for the benefit of this College is only $4,928.75.

ENDOWMENT FUND FROM THE UNITED STATES.

The endowment fund received from the United States amounts now to $212,150. This fund, by the terms of the State Act, February 28, 1878, was equally divided between this College and Alcorn University. This College has now $98,575, as $15,000 of the amount originally given to the College, was invested in lands for the College farm, under the provisions of the Federal Act.) Alcorn College has the balance, $113,575. Before the division, the total amount was $227,500, derived from the sales of scrip which represented 207,920 acres of public land. When this land was sold, the State took the money, and issued in lieu thereof, its bonds, running for twenty years, (from March, 1876, to 1896,) bearing five per cent. interest per annum.

LEGISLATIVE SUPPORT.

By the terms of the Federal Act, donating the lands to the States, no part of the land scrip fund, or the interest derived from it, can be used directly or indirectly, under any pretense, whatever, to the purchase, erection, preservation, or repair of any building or buildings, as the income from the fund can only be used as far as it goes towards meeting other expenses. The State, by accepting the gift, incurs the obligation to provide buildings, equipments, and the additional support necessary. The State has liberallly carried out its obligations, and by appropriation has provided the necessary buildings, grounds, equipment and support.

BUILDINGS, GROUNDS, EQUIPMENT, ETC.

The buildings consist of the College building (three stories) containing a chapel, fourteen recitation rooms, a three-story dormitory building, containing one hundred and fifteen rooms, a large library room, writing room, a large room for the department of Biology and store rooms; the capacity being three hundred students, (three to a room;) a chemical laboratory, (two-story,) with large lecture room; room for sixty students to work at analysis, a combustion room, private laboratories for the professor, and store sooms; a hospital for the accommodation of sick students, with four large and four small rooms; a mess-hall and Society rooms for three hundred and fifty students, with large range for cooking, bakery, store rooms and complete mess-hall outfit in the way of cooking utensils and crockery and tables; seven professors' houses; three small cottages for Secretary and Purchasing Agent, for Surgeon, and for Steward and Janitor; a farm-house for foreman and employees; a large barn with stables attached; four large cattle-sheds, for sheltering and feeding 250 head of cattle; engine house, bull and calf shelters, creamery building and fixtures (all in farm department); stable, sheds and outhouses in Horticultural Department; 1750 acres of land. The several Scientific and Academic Departments have a working equipment. The Farm Department has herds of pure bred, graded, and native cattle, mules, improved implements and machinery. The Horticultural Department has a good working outfit,—mules, commercial nursery, orchards, gardens, etc.; and a library of 2,336 volumes, only 1187 that are not United States Department Reports. An inventory just made by disinterested citizens, M. L. Jenkins and A. H. French, shows a valuation of property amounting to $203,401.84.

OBJECT AND PURPOSE OF THE COLLEGE.

The Legislature of Mississippi, by her Act of February 28th, 1878, in carrying out the purpose of the Federal Act, prescribed in the powers given to the Board of Trustees—"the establishment and maintenance of a first-class institution, at which the youth of the State may acquire a common school education, and a scientific and practical knowledge of agriculture, horticulture, and the mechanic arts, and also the proper care and growth of stock, without, however, excluding other scientific and classical studies, including military tactics. They shall regulate the course of study, rates of tuition, management of experimental farm, manner of performing labor, and the kind of labor to be performed by students." The Board of Trustees have endeavored to carry out the spirit of the act, viz: "To benefit agriculture and the mechanic arts." Agriculture being the prevailing industry of most of the citizens of Mississippi, (there being no iron or coal beds, or mechanical pursuits amounting to much in the State,) they have expended what means they had at their disposal, in trying to benefit this industry, preferring to concentrate their efforts to benefit the many, rather than scatter their energy and means, lessening tangible results. They conceived that should other studies be taught, *than those relating to the interests to be benefited,* they should be considered secondary, and rather as means to more readily comprehend the sciences which underlie agriculture and the mechanic arts. Should other studies included within the general scope of the act be taught, it should be after the main object of the act had been first reached, and ample means were at hand to expand in this general direction.

The organization of the College is primarily such as to familiarize students with the leading objects as set forth in the acts, viz: To educate and direct their minds and tastes to agriculture, horticulture, care and growth of stock, management of farms, manner of performing labor and the mechanic arts. To cover this ground a student must have a liberal education of a high grade, in order to comprehend the sciences, which underlie "agriculture and the mechanic arts." The varied conditions contributing to an intelligent understanding of agriculture as a science and as an art, includes an education as broad as that needed in mastering any profession. It must be such as to enable a student readily to understand the sciences, and in acquiring theoretical knowledge, it must be coupled with industrial and practical training. Students must also be familiar with farms and labor, they must labor themselves to keep in sympathy with the interests they are being educated to benefit, and this labor must be a part of their education, and it is educational in so far as it is in illustration of studies taught in the recitation room.

GRADE OF COLLEGE, FACULTY, OFFICERS, ETC.

The College is a first-class institution, affording instruction which provides a good, liberal education, coupled with a theoretical and practical knowledge of the sciences which underlie "Agriculture and the Mechanic Arts." Also, a common school education in the preparatory department, supplemented by theoretical and practical instruction in agriculture. The class-room instruction goes hand in hand with industrial training, given by labor on the farm, in raising and cultivating all kinds of crops; breeding, caring for, and feeding pure bred, graded and native cattle for dairy and beef purposes, with the creamery and butter handling, in the gardens, vineyards, orchards, small fruit culture, commercial nursery, floriculture; in handling tools, with labor-saving implements, etc., etc. The faculty consists of a President, who is the administrative and executive officer, 9 Professors, 3 Assistant Professors, a Secretary, Purchasing Agent and Instructor in Book Keeping, a Surgeon, 5 Tutors. a Drawing Instructor, a Writing Master, a Steward and Janitor, a Foreman of the Farm, and a Hospital Nurse. The salaries are: President, $2,500; 6 Professors, $2,000 each; 1 Professor, U. S. Officer paid by the United States; 1 Professor, $1,250; 1 Professor, salary not fixed (Dairy Husbandry), 3 Assistant Professors, $800 00 each; Secretary, Purchasing Agent, Book-Keeper and Instructor in Book-Keeping, $1,800 00; Surgeon, paid in fees by the students; 1 Tutor, $600 00; 1 Tutor, $450 00; 3 Tutors, $360 00 each: 1 Writing Master, $500 00; 1 Instructor in Drawing, $400 .00;

Foreman of the Farm, $600 00; Hospital Nurse, $270 00; 2 students, assistants in Departments of Biology and Chemistry, $112 50 each.

The Faculty is an able, earnest, and united one; they are all firm believers in industrial education; there is not a discordant *element in it, and all are enthusiastic in their work.*

THE DEPARTMENTS OF THE COLLEGE.

The reports of the professors and officers in charge of the different departments, supplement and form a part of this report. I commend them to your careful consideration, as to the details of their instruction and work with the student body. They are most complete, and show in detail our improvement and progress. I fully approve of the reports and the recommendations they contain. Several of the departments need some additional equipment, *made necessary by our large attendance and rapid growth.*

The Department of Mathematics needs an outfit for illustrating the principles of Mechanics, about $800 00.

The Department of Chemistry and Physics needs an additional outfit, about $860 00.

The Department of Biology needs a supply of additional outfits, about $800 00. The other departments about $750 00.

ATTENDANCE OF STUDENTS.

In the two sessions since my last report (1883 and 1884, and 1884 and 1885), we had for the first, 257 students, (122 in the College classes, 135 in the preparatory department) graduating class, 9; in the second session, 291 students (141 in the college classes, 150 in the preparatory department), graduating class, 11. At the beginning of the present session (1885 and 1886), we have in attendance 369 students so far. Our full capacity, with present buildings and outfit, with the largest Sophomore and Freshman classes we have ever had, (respectively 58 and 84), which indicates much larger graduating classes after the next two years. We could now have more students, had we accommodations; have refused nearly one hundred students from other States this session, but so far have been able to accommodate all Mississippi boys applying. A large number are applying for admission after January, but we will be able to accommodate only as many students more as will replace those who have left or may not return after the Christmas holidays (say about 30.)

The College has passed through that depressing period of uncertainty which attaches to all new institutions, and in future we can safely predict that under the able and wise management of the present Board of Trustees, and its increasing popularity, the attendance and development will only be measured by the means at their disposal. We have a post graduate class consisting of 9 Bachelors of Science, and 1 Bachelor of Arts; the latter a graduate of another State Univerity; and the indications are that in future we will have large classes studying the higher branches of scientific and practical agriculture.

Counting the attendance in each session as shown by the record, we have had at the College since our opening, in September, 1880, 1890 students in a little over five years, an average yearly attendance of 315. This record surpasses that of any other similar institution for first five years established under the Federal Act, passed in 1862, as indicated by the reports of the Commissioner of Education concerning the 47 institutions named.

The report of Lieut. Buck, U. S. A., the Commandant, shows also that the restlessness of students which marked the first few years of our progress has almost disappeared, and the percentage of students who enter and leave each year before the close of the session, has gradually and regularly diminished from 66 per cent. the first session, to about 15 per cent. the present.

COURSE OF INSTRUCTION.

There is a single course of study extending over four years collegiate and two years preparatory, (details shown in our catalogue).

PREPARATORY DEPARTMENT.

The organic law of the College makes a common school education obligatory, hence this Department. The common schools of the State, outside of towns and villages, are not such as they ought to be, and in the black belts of the State the establishment of schools for the whites is almost impossible, and if this department did not exist it would virtually rule out the very class of boys the law was intended to benefit in this State, viz : the sons of farmers. Many of the brightest and most promising boys now at the College could hardly get into this Department when they first entered, and would have been deprived of a collegiate education but for the existence of this Department. Again, students who are far advanced before entering college have generally already imbibed a bias in favor of the so-called "learned professions," whereas, boys who grow up at this College, under the honorable and favorable presentation of agriculture, are apt to be impressed in its favor, and it overcomes that tendency of country boys to move from the country to the towns and villages. Still, with the prospective large attendance in the future, I am inclined to recommend to the Board of Trustees, that this Department be limited to a one year's course, sufficient to fit boys for entering the Freshman class, but not to do away with the Department.

DAILY ROUTINE.

Commencing in the morning, the students rise about dawn, and several hours are given to study, breakfast, etc. The academic exercises, beginning with religious services in the chapel, occupy the students' time until dinner. The industrial and military duties take place after dinner—three-fourths of the students working, one-fourth drilling, according to company organizations, every evening, (weather permitting). Additional time for preparation of studies is after supper until 10 P. M.

DISCIPLINE.

The discipline is most excellent, and is directly administered by an educated and accomplished officer of the United States Army, a graduate of West Point. It permeates every department of the College, and its influence is felt in the class-room, and on the farm, as well as in the dormitory and on the campus. For nearly two years there has been no disorder of any kind in the student body, and the moral, best element among the students is in front controlling in all matters. I have never seen better behavior among an equal body of men or students, and too much credit cannot be given the Commandant as a disciplinarian.

MILITARY EQUIPMENT.

The College received from the United States 150 stand of cadet rifles and accoutrements, and two rifle cannon; from the State, 100 stand of cadet rifles and accoutrements—total, 250 stand. With the present attendance we still need one hundred stand of arms more.

THE INDUSTRIAL FEATURE.

The principle of technical education as loyally carried out in the interest of agriculture as it now is in the education of the soldier, sailor, doctor, lawyer, engineer, mechanic, will produce like results in preparing young men for the profession of a farmer. It is doing it at this College. Of 27 living graduates, 14 of them are engaged at farming or kindred pursuits—over fifty per cent. Every student here is instructed theoretically and practically in agriculture, and it is telling on the body of students, most of whom indicate that they will be farmers, when their education is completed. All graduates at the College engaged in teaching are taking post-graduate courses in advanced agricultural sciences. The brightest students are all prosecuting their agricultural studies zealously and engaging in work on the farm mainly.

The amount of work done by each student depends in a great measure upon the student himself, although it is compulsory on all. If the student is healthy and the weather permits, a willing, earnest student shows better results than the unwilling, careless boy, who requires punishment to enforce his work, studies, or other duties. Our experience shows that generally those students who are most earnest in their work, stand highest in their studies. This working feature enables boys of moderate means to assist themselves in getting an education, and at much less expense than they can obtain one elsewhere. It also inculcates and retains industrious habits at a period of life when most boys give sole attention to brain culture, to the exclusion of any industrial training, which has a tendency to make them look down on labor or any industrial pursuit as not requiring culture. The system of this College makes labor honorable and demonstrates that high culture is not separate from, or incompatible with work of any kind, and especially farming; but go hand in hand in developing our vast industries and resources. It is essential that theory and practice go together in the education of the farmer. It is deemed essential in preparing young men for the so-called "learned professions" to give them a liberal education and then send them for technical instruction to the military, naval, law, medical, divinity, engineering and other colleges to fit them for their life-work. Why is this not necessary for the farmer, who has to understand nature, and nature's laws? He has the most difficult and constantly varied problems to solve, depending on the seasons, soils, diseases of stock, etc. Yet it is generally assumed he needs but little education. The lack of this education accounts for our worn-out lands and decreasing crops yearly on the same acreage. The so-called professional men require expensive outfits outside of the class-rooms, such as are necessary at West Point, Annapolis—dissecting conveniences at medical colleges, field-work at engineering colleges, shop work, moot courts, etc.—all of which is about as expensive as the theoretical class-room instruction, yet is deemed necessary for success. Should not the farmer have his outside instruction, as well under able and practical professors on the farm, with stock, in garden, etc.? It is stated this is expensive. It is expensive, but it is as essential to the intelligent, educated farmer, as to those in other pursuits or professions. The lack of this special training, which is deemed so necessary in other Colleges, is what places the farmer at disadvantage in the struggle of life. The outside equipment of an Agricultural College in way of farm, stock, nursery, creamery and crops, brings a handsome return in the way of profits; whereas, this outfit in other professions shows no tangible return, except in the education of the student, hence the reason is two-fold, for this outside technical training for the farmer. The burden of taxation, too, in Mississippi falls on the farmer; he should, therefore, have a college as well equipped as any provided for those entering other professions. Agriculture is nearly everything in Mississippi (as we have no iron or coal beds) and it should be elevated and intelligently guided, or else there can be no prosperity in the State.

FARM, GARDENS AND EXPERIMENTS.

The farm has in it about 1750 acres, only 400 of which is good land, (and not all this in cultivation); the balance is worn, gullied hill land; (old cotton fields.) At first it was considered a great disaster to have selected such a poor farm. Now it is evident it will be a great blessing to the State in showing how our worn lands can be reclaimed and made remunerative under skillful, simple treatment. The proportion of good and poor land on the College farm is about the same as that on the average Mississippi farm, still all is now being utilized and becoming rapidily profitable. The good lands are being carefully cultivated in crops, and increased in fertility, while the poor lands have been enclosed. secured from washings, and nature is being assisted in covering them with grasses for grazing cattle, and in this way they are almost as remunerative as the good lands. The farm is now beginning to pay handsomely. A mistake was made in anticipating this result too early (considering the poverty of most of the land), but there is no doubt now about the farm paying well in the future, and increasing the income every year, as it is improved and more thoroughly cultivated.

RESULTS.

As a result of the work done, I refer to the increased value of the farm as shown by the appraisers; to the fact that lands around the College have greatly enhanced in value, in copying after the College plan; to the fact that much land that was regarded as almost valueless, is now being enclosed by wire fencing as pastures for stock;. to the fact, that during the last summer twenty one silos were erected almost in sight of the College. as the result of ensilage feeding of stock at the College; to the fact, that herds of milk-cattle are being doubled to patronize the College Creamery, which has proved a success; to the fact, that this Creamery, by its work, has caused the imaginary "dairy belt" claimed further north to disappear, and demonstrated at the Agricultural College, that Mississippi is a great cattle and butter State, and for little outlay our butter can be easily handled and placed in market at the South, driving out Northern and Western butter, that in almost every instance the College Creamery butter commanded better prices than the Western butter; to the fact, that farmers in our own and other States. are almost daily visiting the College to see our methods and get information as to our practice and results; in fact, the College is almost an official bureau of information.

HORTICULTURE.

The horticultural grounds are being rapidily developed by one of our own graduates, and that department is self-sustaining from this time. We have permanent orchards coming on, which are promising. Have a paying, commercial nursery, supply all our students with abundant vegetables and small fruits, and soon will be shipping vegetables and fruits to add to our income.

LABOR.

All the labor in the farm and in the horticultural department is done by students, excepting the driving of the teams, which requires constant work, and thus would interfere with their studying.

VETERINARY SCIENCE.

This science is taught only three months by Dr. Phares. This time is not sufficient. There is a demand in many directions over the State for the establishment of a Chair of Veterinary Science at the College, and a State Veterinary Surgeon. The stock interests of Mississippi are rapidly becoming more and more valuable. Many of our citizens have herds of pure-bred stock, and single animals are frequently valued at thousands of dollars. The loss on live stock annually in Mississippi is very great, and frequently the most valuable animals die because of no one knowing the ordinary remedies. The teaching of this science more generally to the students would soon disseminate valuable information over the State. I deem this a most important matter, and it has been urged upon me by our great stock interests. Five thousand dollars would establish the Chair and give it a fair start, and additions could be added as needed.

EXPENSE OF STUDENTS.

Tuition is free to Mississippi students. Boys from other States are charged a tuition fee of $20 00 for the session. The expenses of a student are: A matriculation fee, on entering, of $5,00; which, when once paid, insures a full course at the College. A medical fee of $5 00 is also paid on entering, to enable the Board to employ a suitable physician to give his services and furnish medicine to the sick students when necessary. The uniform suit of cadet gray costs about $17 00. The board averages less than $8 00 per month. To reduce these expenses, students are required to work from nine to fifteen hours a week, and also on Saturday work is furnished to all who apply. It is compulsory during the week, and optional with students on Saturday, on which day many students work from six to ten hours. It is no unusual sight to see one hundred and fifty students at work on Saturday. The following statistical exhibit, taken from the Secretary's books, for the session of 1884 and 1885, shows the necessary expense, and how students can reduce their expenses by work, viz: 176 students went through the entire session on an average of $68 33; 100 students on an average of $53 67; 50 students on an average of $21 56; 25 students on an average of $15 40. Six students—Messrs. W. B. Stark, S. A. Wilkinson, H. C. Watson, S. A. Morris, P. K. Whitney and W. C. Welborn, paid their way and had balances of several dollars to their credit. In the expenses are included board, lights, coal, medical fee, washing, books and furniture. The uniform is not included in the estimate, because it simply takes the place of ordinary clothing, and we claim that the uniform is a better suit than can ordinarily be purchased for the money paid for it. So it is shown that the average expense of a student at this College is much below $100 00, which puts a collegiate education within the reach of nearly every boy in Mississippi.

NEW ORLEANS EXPOSITION.

By the law appropriating money to have the State make an exhibit of her resources at New Orleans, this College was to fall heir to the State exhibit at the close. The Exposition has been continued through another winter, and the College has not yet received the advantages expected, but will no doubt get the exhibit at the close of the present Exposition.

HEALTH.

The health of the student body for several sessions has been most excellent, all that could be desired. The grounds and buildings are well drained and located on the highest ridge in this section. It frequently occurs that out of three hundred students in the dormitory there is not a sick boy in the hospital.

CHARACTER OF STUDENTS IN ATTENDANCE.

The character of students has improved almost yearly, and we now have a most earnest, studious and exemplary set of boys; showing that they appreciate the great advantages the State is affording them, and are determined to take advantage of it. They are enthusiastic as to the merits of the College, and at the beginning of the present session considerably over two hundred old students returned, nearly all bringing back their friends as new students. They rarely fail to speak encouraging words for the College. It is also observed that the new students entering this session are much better prepared in their studies than those heretofore received. Showing that our schools throughout the State are affording better instruction. This is marked. Our last statistics show that out of the whole number of students present 88 26-33 per cent. are sons of men engaged in industrial pursuits, while only 11 7-33 per cent. of the entire number are sons of men otherwise employed.

FARMERS' INSTITUTES AND BULLETINS.

The Farmers' Institutes held at different parts of the State for two years back, have had a happy effect in popularizing the College, and in convincing the farmers that this is a genuine Agricultural College, working in their interest. They are anxious to have more of these institutes—in fact, more than we can afford to attend, and a visit to each locality is followed by a large number of students. They are doing much good in arresting the attention of farmers, and pointing them to the necessity of a better system of cultivation than the exhausting and unsatisfactory one now pursued. We find that the are willing and anxious to get more light on the subject. The College has also performed some valuable experiments of interest to the farmers of the State, and there is a great demand for them. We are now prepared to continue those experiments, and regularly issue bulletins, putting them before our farmers, that they may take advantage of them. Had we a small printing press we could do a valuable work in this direction,

THE ENERGIES OF THE COLLEGE.

The energies and means of the College are confined to Agricultural education, as agriculture is the predominant industry of our citizens, in which nearly all are employed. The Board feels that by this policy they can do the greatest good to the greatest number. But we are ready to add the mechanical feature, whenever the State feels able to appropriate money to erect shops for wood and iron work, and equip them.

DEMANDS FOR INFORMATION.

This is a constantly increasing work devolving upon the President, Professors of Biology, Agriculture, Chemistry and Horticulture. It requires fully as much time and labor as that taken in their regular College duties, and shows the growing popularity of the College, and esteem in which it is held.

LIBRARY.

Nothing has indicated the rapid growth of the College more than the fact that the library does not near meet the wants of the faculty and students. There has been expended for books, by the Board in the five years of our progress, only two thousand and forty-four dollars ($2,044.) There are not books enough even for reference, and parallel reading for the students in the scientific and literary departments. There are only about 1000 volumes belonging to these departments, and the books for promiscuous reading are very insignificant in number, scarcely three volumes to each of the 369 boys at the College. This is a technical college, and above all others, needs a good library to promote general culture and information. We have been obliged to supplement this want by a good supply of magazines and periodicals of all kinds and newspapers. We frequently find over one hundred students in the reading-room of the library. We need an appropriation of $5,000 to supply this great need at the College.

STATE PAPERS.

The College authorities are under great obligation to the press of the State for supplying the reading-room of the library with copies of the county papers, which to our students are more interesting than all others, as they give all their home news; also for the uniformly kind and generous support extended to the Board in the management of the College.

FINANCIAL STATEMENT.

I refer to the clear financial statement of the Secretary and Book-keeper of the College. It shows that the institution is out of debt, and has sufficient funds to meet all expenses to the meeting of the Legislature in January, 1886. The last Legislature gave the College the same general support as given to the State University, viz: $32,500 a year. The liberal support given the College, enabled the Board besides generally conducting the institution, definitely to solve in an official way the successful handling of butter and milk at the South, and to do away entirely with the theoretical claims of what has been known as the "dairy belt" further north. It has shown that for an outlay of $1200 or $1500 any citizen of Mississippi or the South can conduct a profitable creamery and handle butter for market, who is surrounded by other reasonable conditions. This information alone, coupled with our feed experiments, if utilized, is worth hundreds of thousands of dollars to the State. It also enabled the Board to inaugurate a uniform system of experimental work in the interest of agriculture for the benefit of our farmers; also to meet the great demand made on the College to accommodate and provide for the large and regular attendance of students the last session (291), and the beginning of the present session, 369, now in attendance.

As against the liberal support given by the Legislature, we point to our success, to the steady increase of the value of our property as shown by the appraisers, viz: $28,544.00 equaling almost one year's support given the College; also to the assistance the College is now giving in practical information and experimental work to the farmers of the State, and in pointing to a better system of agriculture; also to the facilities this College is now affording to our young men of moderate means to acquire an industrial education.

CYCLONE.

Just about the adjournment of the Legislature two years ago, a destructive cyclone struck the College, greatly damaging the dormitory, College building, and laboratory; wrecking the large mess-hall, carrying away the entire roof; also destroying our large barn, all our cattle sheds, engine house, cribs, calf shelters, and killing some cattle. The Legislature appropriated $10,000 to repair and replace the property destroyed. The Board of Trustees have completed the work in accordance with the conditions of the law. It did not take quite the entire amount and there remains in the State Treasury to the credit of this fund $388.08.

WANTS AND NECESSITIES OF THE COLLEGE.

We ask the Legislature to give the College the same general support given the last two years; also to provide a scientific building for the departments of Biology, Agriculture and Horticulture, with Drawing, Library, and Armory rooms, and thus give room to properly take care of the valuable property already accumulated and accumulating for Museum, for illustration of resources of the State, and for State exhibit at New Orleans, ordered to the College at the close of the Exposition. This additional building is absolutely necessary for the preservation of property, and to meet the very large attendance of students. It will enable the Board, also, with slight expense to make additional room in the dormitory for seventy-five more students. The property as now housed and arranged is not safe, and is too valuable to run the risk of destruction. Also, $5,000 for the library. In view of the large and increasing number of students, it is not considered unreasonable to ask these additional facilities to enable the Board to perform the duties assigned them by the State. They feel that they are doing a great and useful work in guiding and developing the great and all-prevailing industry of Mississippi—the one upon which her prosperity and happiness depends.

SUCCESS OF THE COLLEGE.

The success of the College is undoubtedly due to the wise conception of the act organizing it by the Board of Trustees. They have truly followed out the spirit of the law and organized and conducted the institution as indicated in the heading of the Federal

Act of 1862, viz: "To benefit agriculture," and to them all credit is due. The President, in carrying out the policy of the Board of Trustees, has been earnestly, ably and zealously supported by the entire faculty, who are enthusiastic believers in industrial education. Any credit that may belong to him, he cheerfully concedes to the loyal and intelligent support of the faculty.

Respectfully submitted,

S. D. LEE, President.

ATTENDANCE BY COUNTIES.

LIST OF COUNTIES, AND ATTENDANCE FROM EACH, AT THE A. & M. COLLEGE DURING THE SESSIONS OF 1883 & 1884; 1884 & 1885; 1885 & 1886.

COUNTIES.	Session 1883 & 1884...	Session 1884 & 1885...	Session 1885 & 1886...	COUNTIES.	Session 1883 & 1884...	Session 1884 & 1885...	Session 1885 & 1886...
Adams	9	4	4	Lincoln	6	4	6
Alcorn	..	..	..	Lowndes	9	12	16
Amite	1	3	4	Madison	13	14	16
Attala	..	2	10	Marion	..	..	..
Benton	3	3	..	Marshall	5	13	..
Bolivar	..	1	3	Montgomery	..	1	2
Calhoun	..	..	..	Monroe	8	9	11
Carroll	3	6	5	Neshoba	..	..	1
Chickasaw	8	5	1	Newton	2	1	3
Choctaw	3	2	2	Noxubee	9	9	8
Claiborne	2	6	9	Oktibbeha	55	52	50
Clarke	2	7	11	Panola	2	2	1
Clay	11	7	9	Perry	..	..	..
Coahoma	1	..	2	Pike	2	3	2
Copiah	10	8	22	Pontotoc	2	2	2
Covington	..	..	..	Prentiss	..	..	1
DeSoto	1	1	2	Quitman	..	..	..
Franklin	1	2	3	Rankin	1	1	2
Greene	..	..	1	Scott	1	1	6
Grenada	..	3	7	Sharkey	3	1	1
Hancock	1	..	..	Simpson	..	..	..
Harrison	2	1	1	Smith	2	3	2
Hinds	12	19	17	Sunflower	..	..	..
Holmes	16	8	11	Tallahatchie	..	..	1
Issaquena	..	..	..	Tate	1	1	4
Itawamba	..	..	..	Tippah	..	..	1
Jackson	1	4	6	Tishomingo	..	..	..
Jasper	3	3	2	Tunica	2	1	..
Jefferson	9	11	13	Union	..	..	..
Jones	1	1	3	Webster	1	3	1
Kemper	2	2	5	Warren	4	4	2
Lafayette	5	2	5	Washington	4	3	4
Lauderdale	8	8	6	Wilkinson	1	2	2
Lawrence	3	1	4	Wayne	2	4	1
Leake	..	..	3	Winston	..	..	2
Lee	..	..	1	Yalobusha	1	3	6
Leflore	2	3	..	Yazoo	1	1	3

REPORT OF SECRETARY.

A. & M. COLLEGE OF MISSISSIPPI,
November 28, 1885.

Gen'l S. D. Lee, President:

DEAR SIR—I herewith submit my report as Secretary of the

A. & M. College of Mississippi, which embraces all receipts and disbursements since the published report December 1, 1883, under the head of "General Statement." Also classified statements of the several Departments. The itemized statements, with vouchers properly numbered, approved and receipted, are on file at my office, and have been examined and approved by the Finance Committee of the Board of Trustees to date. All bills have been paid and we still have at Jackson, out of last appropriation, a balance of $4450.23, which will be sufficient to pay expenses to January 1, 1886. We have expended more for improvements and incidentals than we had anticipated. On account of the greatly increased number of students in attendance, we were obliged to fit up more rooms in Dormitory, and to further equip Recitation Rooms, Writing Room, Laboratory and Museum for proper instruction of students. We have built and thoroughly equipped the Creamery within the last twelve months.

Attached to the Financial Statement you will find a copy of the inventory of property taken by the Committee of Citizens of the State appointed by the Board, showing a property valuation of $203,401.84, being an increase in two years of $28,544.75.

Respectfully submitted,

T. F. WATSON, Sec'y.

GENERAL STATEMENT.

RECEIPTS.

Amount cash on hand last report	$ 1,053 42	
Am't from State Treasurer for salaries	40,658 26	
Am't from State Treasurer for student labor	10,199 61	
Am't from State Treas. for equipm't, incidentals, Am't from State Treas. for repairs, insurance, etc.	12,279 35	
Am't from State Treasurer for dairy equipment	3,719 46	
Am't from State Treasurer for farm department	2,023 23	
Am't from State Treasurer for horticultural department	2,813 48	
Am't from matriculation and tuition fees	2,436 74	
Am't from subscriptions	407 27	
Am't from sale of coal	2,797 74	
Am't from fees, students and analysis	2,937 45	
Am't from sale cattle farm department	965 00	
Am't from sale beef farm department	2,247 74	
Am't from sale milk farm department	2,293 37	
Am't from sale butter farm department	431 96	
Am't from sale field crops farm department	814 50	
Am't from sale nursery stock horticultural department	809 58	
Am't from sale vegetables horticultural departm'nt	720 25	
		$89,708 41

DISBURSEMENTS.

Paid salaries from Nov. 28, 1883	$40,658 26
Paid student labor	10,199 61
Paid equipment and building	5,158 60

Paid incidental expenses	4,327 05	
Paid repairs	1,184 25	
Paid insurance	1,337 50	
Paid printing	723 33	
Paid postage and stationery	583 08	
Paid chemicals	3,604 17	
Paid coal	2,231 40	
Paid biological	1,384 95	
Paid books	390 39	
Paid equipment of dairy	3,702 92	
Paid farm labor	5,044 45	
Paid farm stock	2,021 05	
Paid farm rent	415 00	
Paid farm office	29 20	
Paid farm implements and machinery	510 64	
Paid farm permanent improvements	160 76	
Paid farm seeds	374 49	
Paid farm fences	93 51	
Paid farm fertilizers	167 80	
Paid farm teams	81 92	
Paid horticultural labor	882 04	
Paid horticultural nursery stock	1,631 79	
Paid horticultural implements	256 27	
Paid horticultural permanent improvements	217 33	
Paid horticultural office	38 40	
Paid horticultural seed	484 64	
Paid horticultural fertilizers	595 83	
Paid horticultural teams	449 20	
Cash on hand	768 58	
		$ 89,708 41

FARM ACCOUNT.

DEBITS.

To am't paid for labor	$ 4,106 93	
To am't paid for labor students	937 52	
To am't paid for stock	2,021 05	
To am't paid for rent	415 00	
To am't paid for office	29 20	
To am't paid for implements and machinery	510 64	
To am't paid for permanent improvements	160 76	
To am't paid for seed	374 49	
To am't paid for fences	93 51	
To am't paid for fertilizers	167 80	
To am't paid for teams	81 92	
To am't paid for equipment of dairy	3,702 92	
To am't to balance	45 71	
		$ 12,647 45

CREDITS.

By balance printed report	$ 52 19	
By sale cattle	965 00	
By sale beef	2,247 74	
By sale milk	2,293 37	
By sale butter	531 96	
By sale field crops	814 50	
By State Treasurer	5,742 69	
		$ 12,647 45

HORTICULTURAL ACCOUNT.

DEBITS.

To am't paid for labor	$ 335 09	
To am't paid for labor students	546 95	
To am't paid for nursery stock	1,631 79	
To am't paid for implements	256 27	
To am't paid for permanent improvements	217 33	
To am't paid for office	38 40	
To am't paid for seed	484 64	
To am't paid for fertilizers	595 83	
To am't paid for teams	449 20	
To am't to balance	36 47	
		$ 4,591 97

CREDITS.

By balance printed report	$ 248 66	
By sale vegetables	720 25	
By sale nursery stock	809 58	
By State Treasurer	2,813 48	
		$ 4,159 97

INVENTORY OF COLLEGE PROPERTY APPRAISED FRIDAY, NOVEMBER 20, 1885.

College Buildings	$99,800 00
" Land	42,010 00
" miscellaneous property	4,111 98
" Hospital property	461 20
" Library	2,014 34
" Biological Department	2,316 50
" Chemical Department	5,292 62
" Stewards Department	2,504 70
Farm Buildings	9,735 00
" Machinery	2,600 00
" Implements	1,129 00
" Produce	5,417 50
" Stock	15,801 00
" Hand Tools	100 00
" Miscellaneous	3,000 00
Horticultural permanent improvements	500 00
" Implements	289 50
" Stock	500 00
" Growing Crops	155 00
" Produce	273 50
" Orchards and Nursery Stock	5,390 00
Grand Total	$203,401.84

STATEMEMT OF APPRAISING COMMITTEE.

A. & M. COLLEGE OF MISSISSIPPI,
November 21, 1885.

After having appraised the property of the A. & M. College, we feel that we would not have completed our duty if we did not express to the Legislature and citizens of the State, the great pleasure we have felt in witnessing the complete success of this institution. We find here in work being done, in the enthusiasm and earnestness of faculty and students, in the line of agricultural education and development, more of hope for the future of Mississippi than we have met since the war. We feel that this College in a few years will solve the great agricultural problem in this State, and in an object lesson and thought the students in attendance will indicate to our farmers a system of farming which will be profitable and encouraging instead of following the depressing system of gradually exhausting the soil and decreasing the yield. We desire to say that the State owes a debt of gratitude to the Board of Trustees for having adopted a policy strictly loyal to our agricultural interests and inspiring a confidence and faith in our young men which will soon elevate the agriculture of this State.

We find an attendance of 365 students, which could be increased if there was room, and we urge on the Legislature to liberally support this institution and add increased facilities, as we feel that with the present Board of Trustees, no money in our State could be more wisely invested. With the present attendance there is not sufficient room or facilities, in way of buildings for comfort or preservation even of the property at this College, and we urge that such additional facilities be afforded as in the opinion of the Board of Trustees are needed.

M. L. JENKINS.
A. H. FRENCH,
Appraising Committee.

DEPARTMENT OF BIOLOGY.

To President S. D. Lee:

SIR: This Second Biennial Report is now offered:

CHANGE IN CURRICULUM.

The transfer of botany from the Freshman to the Junior class is a change of a very beneficial character. 1. It gives more time for the study of English in the Freshman year, where so much needed and so profitably studied. 2. The more advanced students, with two years' previous training in the meaning and use of language, and disciplined minds, are better prepared for the comprehension of the difficult study of Botany. 3. Under the former arrangement over two entire years intervened between the study of Botany by illy prepared Freshmen and its resumption by the Seniors; while under the present arrangement it is commenced in the latter part of the Junior year and continued most profitably in the Senior.

By this arrangement my class instruction is limited to the Junior and Senior classes; and my work may be mentioned under these two heads.

JUNIOR CLASS.

1. *Anatomy*, human and comparative, is taught by lectures, books, charts, skeletons, dissected bodies, special organs and parts, wet and dry preparations, dissections before by and the pupils.

2. *Physiology* and *Hygiene*, in order to economize time, are taught in connection with Anatomy.

3. *Veterinary Science* is next taken up, including comparative anatomy of the domestic animals. Here also the lectures are illustrated by books, plates, skeletons, wet and dry preparations of special parts, of normal and diseased organs, and the examinations of sound and sick animals, and by autopsies as often as practicable. Instruction is given also in the principles of breeding, selections for special purposes, improvement, management and treatment of live stock in health and disease. The course is, however, too limited by the little time allowed for it.

4. *Botany* follows in the last term, the lectures being aided by excellent plates, an herbarium of many thousand plants, indigenous and exotic, wet preparations of plants, several hundred species of woods, and the daily examination by the students of all fresh plants that can be obtained from gardens, fields and forests. Thus, the student practically learns Botany, organic or structural, physiological, systematic, and phytological or descriptive.

5. Simultaneously with this course in Botany, one hour daily is given to *Physical Geography*. This comes in well here under a new arrangement, being so intimately connected with Botany, Zoology and Geology.

SENIOR CLASS.

1. In this class, *Botany* is resumed, with dissections, preparation of sections and drawings, (under the compound microscope) made by the students; each student being furnished with a microscope, accompanied with eye and object pieces of several powers, cameras and other accessories. These investigations extend to fungi and other parasites, and saprophytes.

2. *Geology* is taught by lectures, books, charts, maps, rocks, minerals, fossils and soils—the specimens from all the more noted localities of the world—especially those of Mississippi.

3. The lectures on *Zoology* are aided by the latest books and scientific periodicals of the old and new world, and a large quantity of material collected for the purpose.

4. Last session *Entomology* was temporarily relegated to this

Department; and a course of lectures on *Economic Entomology* was given with insects, and their work displayed before the class. The class also made many microscopic studies, some dissections and a few drawings of the subjects in their several stages of morphology.

MEANS OF ILLUSTRATION.

Appliances, and facilities for utilizing them, have been much increased since our last report; and consequently the instruction has been easier and more satisfactory to the teacher, and much more practical and profitable to the students, who are always eager to attend these courses of study.

WANTS.

Yet very many additional appliances and facilities are much needed for rendering instruction in the subjects confided to this Department as efficient and complete as it should be. There is no room or any arrangement adapted to microscopic work; no suitable place or appliances for making dissections; no room that can be arranged for lectures on Anatomy and other subjects in which objects are used for illustration; no room where live animals can be introduced for clinical or surgical examinations, lectures, operations and treatment, and for the study of parts, points, forms and other matters connected with live stock, as well as the examination of feeds, poisons, etc. A building suitable for these and other important purposes is of paramount importance—an absolute and pressing want for the proper development, working, efficiency, and greatest usefulness of the College to the State, and the farmers and other people of the State.

FARMERS' INSTITUTES.

Six of these were held last year and five this year. Of these I assisted at all but one last year and two this year. But two were held this year at which no other member of the Faculty could attend. At one of these held with the Patrons' Union near Lake Station where between 3,000 and 4,500 people were present, I was most efficiently assisted by Messrs. W. C. Welborn and S. A. Wilkinson, students who had just completed the studies of the Junior class. They acquitted themselves with distinguished ability, greatly to the credit of the College and the edification of the large audience. At these Institutes I discussed forage crops, ensilage and silos in all their bearings, diseases of live stock and of plants, cross-fertilization and other modes of improving corn, cotton and other farm and garden crops and many other topics.

CORRESPONDENCE.

This has been simply immense. A large portion of the work connected with it was very satisfactorily performed by my faithful Assistant, Mr. W. B. Stark, now a member of the Senior class. Much of the time during these two years he has been occupied several hours daily, doing nearly all the microscopic work and rendering assistance in many other ways. Other assistance also, outside the College, has been obtained part of the time. But still it has been physically impossible to do all the writing and other work. Many investigations desired have not been instituted and many important letters remain unanswered for many months and are still on hand.

Almost everything relating to crops of every kind, to all kinds of live stock, feeds and foods, waters, fungi, poisonous plants and soils, new forage and medicinal plants, has been examined and discussed. Many of these matters have been reported on in the S. L. Stock Journal and other publications in other States. Reports on new medicinal plants found in Mississippi have for several years appeared regularly in the annual Reports of the Mississippi State Medical Association.

One Report on unwholsome cistern water used in a State Benevolent Institution in Jackson will be found in the biennial Report of the State Board of Health. This Report is now in the hands of the State Printer and will go before our next Legislature.

Hundreds of letters from many States, and many personal interviews, involving questions of veterinary medicine and surgery, and the management of millions of dollars worth of live stock; and many most urgent solicitations to visit many localities in order to advise in person and to perform surgical operations; and the pleadings of every one of our classes in Veterinary Science for the prolongation of the course of instruction; and the urgency of the stockmen all over the State show that.

A CHAIR OF VETERINARY SCIENCE

is one of the greatest, most important and pressing wants of the College and of the State.

SEEDS

have often been sent in for identification, for examination as to adulterations, soundness, germinating power and many other points; some cases requiring expert testimony, by which legal contests have been decided, and in two or more instances amicably adjusted.

Several controversies of botanical and entomological subjects have been very successfully and satisfactorily terminated in several leading periodicals of other States.

Our delegation to the Convention of A. & M. Colleges and Experiment Stations, held in July last, at Washington City, was cordially treated and participated in the proceedings of the Convention, which have been published and need no further mention here. Much good work was done for all agricultural interests of the whole country. Many benefits were secured for our State and people while we were at the Capital—among which are conspicuously the aid that will be furnished in the examination of all seeds to be distributed to farmers from the Department of Agriculture and the assistance promised by the section on Fungi attacking animals and plants. This new section is one recently formed by the head of the Department, and we confidently expect from it most beneficial results. Our relations with the indefatigable Chief, and with his subordinate heads of divisions and sections, are of the most cordial character.

Other matters of importance should perhaps have some mention, but the length of this report admonishes of the danger of wearying. Therefore, it is here closed and respectfully submitted with thanks for your uniform courtesy and kindly consideration in all our intercourse.

D. L. PHARES.

REPORT OF PROF. F. A. GULLEY, 1884 AND 1885.

A. & M. COLLEGE, MISS., November, 1885.

S. D. Lee, President:

SIR—The following report of the work of the Farm Department of the College, for the years 1885–'6 to Nov. 15th, is respectfully submitted:

The work of this department embraces instruction in the class-room and field, Student labor, and the general work of the farm. My own duties include:

1st. Courses of lectures to the Senior, Sophomore, and Freshman classes of each year, resident graduates and students making a special study of Agriculture, on the theory and practice of general agriculture.

2d. Supervision of Student labor.

3d. Management of all farm work, buildings, and experiments.

4th. Attending farmers' Institutes and other meetings and delivering addresses on farm topics.

5th. Correspondence in reference to the College, College herds, and answering questions referring to a variety of subjects of interest to farmers generally.

The correspondence from all parts of this and from other States indicate the standing of the College with the people.

A considerable portion of my time has been occupied in preparing plans for farm buildings, silos, suggesting outfits of machinery and implements. I have also been called upon to visit places and submit plans of drainage, arrangement of buildings, construction, etc.

The work of this department is attracting attention throughout this and other States, and the reports of the results of our experiments are copied by papers all over the country.

THE COLLEGE FARM.

The tract of land under the control of the farm department, embraces some 1,750 acres, lying in an irregular, narrow body, varying from one-fourth to three-fourths of a mile in width, and four and one-half miles long. About 200 acres are covered with timber; the remainder is branch bottom and rolling uplands; the former amounting to about 400 acres on the entire tract and mostly contained in a narrow strip, running lengthwise through the center of the farm. The College and farm buildings are located near the center of the farm and one mile from one end. The peculiar shape of the farm makes any convenient arrangement of the fields almost impossible, and adds very largely to the cost of improving the land, draining, working and harvesting crops, and calls for a large amount of fencing to enable us to make the land available for cropping and pasture. Previous to being occupied by the College, about two-thirds of the bottom land had been partially cleared and cropped, but at the time purchase was made nearly all the land was lying out, the owners being unable to find renters at any price. The uplands were badly scored by washing, and the ditches in the bottoms had been allowed to fill and the land to grow up in brush.

The work of the first and second year after the opening of the College, was expended on the land adjacent to the buildings to protect the soil from further washing. The fields were fenced, hill-side ditched, planted in corn, oats and peas, followed by grass, ard finally turned into pastures, with the exception of what is used for growing ensilage crops near the farms. Commencing in 1833, it has since been the policy of the department to drain and fit the bottom land for cropping and turn the upland into pastures for stock. As there were no fences or ditches on the farm, some twenty-four miles of fence, and half as many miles of ditches have been built and opened to make all of the land available for cropping and pasture. The greater part of the labor on the farm has been expended in improving the lands and has as yet made no return except adding to the value of the property. The result of this work is fast becoming apparent in the crops of the present year, and the noticeable change that has been made in the condition of the larger portion of the upland. now affording a large amount of grazing and effectually protected from washing away. We now have 200 acres of bottom land cleared up, well drained, broken thoroughly and fitted for high cultivation; 100 acres more will be ready to crop next spring. A considerable part of this land will be worked in a five year rotation, the crops following each other in regular succession, planting one-fifth of the land to each crop, each year, using the concentrated fertilizers on the corn and cotton.

1st year corn, followed by peas.

2d year clover.

3d year clover.

4th year oats, followed by peas.

5th year cotton—commencing the sixth year with corn again.

The plan, or system, that has been adopted on the College farm embraces stock growing and diversified cropping. This is believed to be the most practicable and profitable system that can be followed on farms of like character over a considerable portion of the State.

The main feature of the farm is the stock, and from the sales of cattle, beef and milk, the farm expects to derive the principal part of its income. All crops grown will be consumed on the farm except the cotton crop and such crops as may be grown to produce improved varieties of seeds for sale. An amount equal to the returns from the cotton crop will be expended in cotton seed and meal for feeding purposes, and in concentrated fertilizers. This plan will enable the farm to carry a larger number of stock than could be done otherwise, and at the same time increase the amount of manure made on the place. The cropping will be confined to the best land and the poorer land will be used for pasture until the growth of grass, weeds, etc., has added organic matter to the soil sufficient to make it profitable to fertilize and crop.

CROPS OF 1884.

85 acres corn, yield 1,900 bushels.
60 acres oats, mostly fed out in the stables.
60 acres millet, corn, fodder and other forage.
33 acres Ensilage crops yield 240 tons.
3½ acres Ribbon corn yield 125 gals. syrup and seed.
6 acres Sorghum yield 250 gals. syrup and seed.
4½ acres Cotton yield 3½ bales.

CLASSIFICATION OF LABOR. 1884.

	Number days work.		
	Students.	Men.	Mules.
Corn	270.2	181	260.5
Ensilage	95.5	213	295.5
Forage and hay crops	61.5	216.5	360.5
Oats	168	119.5	240
Ribbon Cane	60.5	26	30.6
Sorghum	83	53.3	20
Cotton	40.3	37	25
Garden	2.2		
Experiment	15.7		
Stock	584.7	433	440.5
Wood	1		
Grounds	47.6	17.7	32.4
Farm, house and labor	3.5	16	2
Drainage, clearing, etc	81.1	241.5	430.5
Buildings	261.4	226.5	288.5
College	3	10	28.5
Fences	156.8	20.5	23
Road Work	20.8	27.8	25
Preparing land for pastures	23.5	32	60
Dairy construction	20.6	21.5	47.5

CROPS OF 1885.

64 acres corn, yield 2,000 bushels.
11 acres cotton, yield 8½ bales of 500 pounds.
35 acres oats, yield 900 bushels.
1⅛ acres sugar cane, yield 180 gallons, and seed for next year.
50 acres millet, sorghum and corn fodder................ } 250 tons of hay
25 acres peas.. } and
25 acres hay... } 60 bushels peas.
43 acres ensilage, corn, sorghum and peas.

CLASSIFICATION OF LABOR. 1885.

	Number days work.		
	Students.	Men.	Mules.
Cotton	443.7	47.8	82.1
Corn	209.5	212.2	401.0
Oats	69.9	100	196.5
Millet, hay and corn fodder	84.6	19.4	203.4
Peas	69.6	59	120.5
Ensilage	202.3	284.5	395.5
Sugar cane	71.3	18.5	26.0
Stock	494.4	490.0	261.0
Pasture grasses		18.5	31.5
Experiments	10		
Fall plowing	9.6	30.0	91.0
College hauling and grading	46	30.0	53.0
Fences	84.9	8.5	12.0
Wood		2.5	5.0
Dairy buildings, etc	72.8	13.61	250.0
Buildings	195.3	48.5	66.5
Permanent improvements, ditching clearing, etc	817.0	74.5	101.5
Tools and machinery	88.5	4.0	
Office	12.0		

COST OF COTTON.

Estimating men and students' labor at 75 cents per day, and mules at 50 cents per day.

Plowing and planting	$ 49 59
Working	119 89
Picking	275 32
Hauling, etc	11 77
Ginning	28 75
Seed	6 00

Fertilizers	25 00	
		—$516 32
8½ bales cotton	$371 86	
290 bushels seed at 15 cents	43 50	
		—$415 36
Loss on crop		$100 96

The loss on crop is due to cost of picking by students. At 60 cents per 100 weight of seed cotton, the picking would have cost $81 60, leaving a profit on crop of $92 76. The extra expense of student labor, as compared with regular hands, doubled the cost of chopping, hoeing, etc., which would decrease the $60 00 more. In other words, had the cotton crop been made the present year without student labor, it would have paid a profit of $17 00 per acre.

COST OF CORN,

Estimating men and students' labor at 75 cents per day and mules' at 50 cents per day.

Plowing, planting and working	$408 98	
Hauling, harvesting, etc	106 32	
Seed	12 00	
		$527 30
2,000 bushels corn @ 50 cents	$1,000 00	
Beef made in corn fields after corn was harvested	100 00	
		$1,100 00
Profit on crop		572 70

The student labor on crop includes a portion of team work and all other labor. With regular laborers we could have grown the crop for $75 to $100 00 less expense. A considerable portion of the corn crop required extra labor owing to the land being full of stumps and roots. This difficulty will be remedied in the next crop and undoubtedly a larger yield secured.

The corn crop cost $8 24 per acre for labor and seed, or deducting value of feed for cattle, we get from the corn fields, $6 67 per acre and 22.7 cents per bushel. We expect to be able to reduce cost per bushel in the next years' crop to not more than 19 cents, as our corn land will all be plowed twice before planting, and we will have the land cleared from roots, permitting the use of the two-mule cultivators in working the crop.

Student labor is expensive labor, so far as results are compared with the work of average field hands. Nevertheless, I consider money paid for student labor as the most profitable investment made by the College. It forms industrious habits and tastes, without which the mental training of the College would not be of special value to the young men in attendance. To encourage the students to work and make it popular eight cents per hour is paid for good work. In some kinds of work a portion of our students perform work worth more than eight cents per hour, but the great bulk of the work done could be purchased for a considerable less amount.

By the use of farm machinery, two and three mule teams, two-horse cultivators, etc., and the employment of a few regular hands, we expect to grow all crops on the farm at a profit, and at the same time pay more for student labor than the work is really worth. Without the student labor system, the College would simply be an ordinary literary innsitution, and there would be no reason for its existence.

To make the labor system successful, it is necessary that the student should actually work, and he must be compensated for his labor to make him a willing and industrious worker. Certain work is considered purely educational and is not paid for, but such work cannnot replace the labor that is obligatory and remunerative. Not one of the so-called Agricultural Colleges in this country has accomplished desirable results, without the compensated, obligatory, student labor system.

Two or three hundred students, working two to three or more hours per day, cannot be employed in such a way as to make the work instructive and profitable, if the labor is paid for, yet we are nearer that point in this College, at present, than any other institution in the country, and from present indications will soon be able to make the several departments of the College return sufficient profit to the College to more than pay for all student labor.

The destruction of our barns by a cyclone in the spring of 1884 called for a large amount of labor during that year in repairing the damage.

The classifications of labor for both 1884 and 1885 shows that more labor has been expended in building, ditching, fencing, etc., than on crops. The returns for this labor expended in improvements are beginning to show in the yield of crops for the present year. Our corn crop for 1881–2 produced about 12 bushels to the acre; 1883, 15 bushels; 1884, 22 bushels; and 1885, 31 bushels. A portion of the crop was planted on a narrow hillside, and made but 15 bushels to the acre, and some of the best land suffered from being too wet, the ditches and drains not having been completed. Our average yield on 40 acres was 38 bushels. Our best yield on one acre, with fertilizer, was 61 bushels.

Our yield of cotton in 1881 and 1882, with fertilizer, was one bale to three acres. We dropped cotton, except in an exprimental way, until the present year. Last year 4½ acres made 3½ bales of 500 lbs. This year 11 acres made 8½ bales of 500 pounds, notwithstanding the rust or blight reduced the yield on half of the land planted each year. Our cotton was planted this year on land that produced but 10 bushels of corn to the acre in 1882.

Our corn crop will be increased to 100 acres, and cotton to 30 acres the coming year, and with an average season the land will be in condition to produce an average of 40 bushels of corn or one bale of cotton to the acre, with an application of two and one-half dollars' worth of fertilizer per acre.

Experiments with the concentrated fertilizers on our land after it has been drained, indicate that their use will be found profitable. Experimental plats of corn and cotton of 1-10 of an acre, gave the following results this year:

EXPERIMENTS WITH COTTON.

No. of plat. each 1-10 acres.	Fertilizers Per Acre.				Yield per acre.
	Cotton seed Meal.	Acid Phosphate.	Super Phosphate.	Wood Ashes.	Seed Cotton.
1...................	300 lbs.				1475 pounds.
2*...................					1350 pounds.
3...................			300 lbs.		1235 pounds.
4...................		300 lbs.			1300 pounds.
5...................				20 bus	1415 pounds.
6*...................					1200 pounds.
7...................	100 lbs.	100 lbs.		5 bus	1350 pounds.
8*...................					1290 pounds.
9...................	100 lbs.	100 lbs.		5 bus	1290 pounds.

* No fertilizer.

EXPERIMENTS WITH CORN.

No. of Plat.	Fertilizer Per Acre.				Yield per acre. In bushels 72 lbs. Husked Corn.
	Cotton Seed Meal.	Acid Phosphate.	Super Phosphate.	Wood Ashes.	
1................	250 lbs.				47 3-36
2................	100 lbs.	100 lbs.		5 bus	45
3*................					36 23-36
4................			250 lbs.		44 1-36
5................				10 bus	36 19-36
6*................					37 13-36
7†................	250 lbs.				39 1-36
7................			250 lbs.		42 18-36
9*................					44 1-36
10................	150 lbs.	150 lbs.		5 bus	49 11-36

* No fertilizer.
† Stand defective on this plat.

A new series of plats, sowed to oats in October, was started this fall. Others will be added next spring. It is proposed to continue the application of the same fertilizer to the same plat for several years to study the effect on the different crops in the rotation, and learn if the continued application will prove profitable, and also to ascertain the best fertilizer for our soil. Failing to get kanite, we used wood ashes to supply potash. Hereafter the kanite will be used instead of ashes. One year's test cannot be relied on as determining the needs of the soil or value of fertilizer used.

STOCK.

The stock feature of the farm returns a profit to the College. The outlay for pure bred stock made no immediate returns owing to the losses from death, and failure to breed, due to the effects of acclimating fever. Our entire herd is now in a good condition and the sales of stock, milk and beef, are more than meeting the running expenses of the farm, while at the same time the herd is increasing in number and being rapidly changed from the few pure-bred cattle and natives we started with, to pure bred and grades.

The inventory shows cattle on hand, and the Secretary's report shows account of sales.

Our work with stock shows that cattle growing and feeding, may be made a profitable addition to the farms of the State.

Accompanying this report I submit a summary of our feeding experiments,showing the great value of cotton seed and cotton seed meal for feeding cattle. The experiments will be continued with some 30 or 40 head of cattle this winter, and with cows giving milk. Experimental stock feeding, to give results that are reliable and of practical value, calls for a large amount of skilled labor and special equipments of stables, scales, cooking apparatus, etc. The necessary outfit has been beyond our means until the past year, and as yet we are but poorly equipped to give such work the attention it should receive at this College.

The publication of reports, experimental and other work, has been commenced, and will be continued as rapidly as we can prepare the matter after the work is completed.

Seeds received from the Commissioner of Agriculture, of grains and other crops, that promise to be of value, are being tested.

EXPERIMENTS IN FEEDING.

We commenced a series of experiments in feeding cotton seed, January, 1882, hoping to call attention to the remarkable nutritive value of what is too often looked upon as a waste product.

Two very ordinary native steers, in poor, unthrifty condition, we put in the barn and carefully fed all the boiled cotton seed they would eat, in addition to hay, oats and straw. Steer No. 1, four years old, weighing 708 pounds, was fed 56 days, gained in his weight, 260 pounds, or an average gain per day of 4.64 pounds. Average daily ration, 14.4 pounds cotton seed, and 11 pounds hay and straw. Steer No. 2, about twenty months old, weighing 350 pounds, was fed 49 days; gained 240 pounds. Average gain per day, 4.89 pounds. Average daily feed ration, 11 pounds cotton seed and 8.7 pounds of hay and straw.

Cotton seed at that time cost us 30 cents per 100 pounds, and estimating hay and straw at $10.00 per ton. The gain in weight of the two steers, cost in feed, two cents, and one and a half cents per pound.

Last winter five steers were fed on boiled cotton seed, ensilage and hay, and four steers were fed on cotton seed meal, ensilage and hay. The cost per pound of gain on the first lot was 2.18 cents; on the latter 3.32 cents. Profit on cost of steers and feed, allowing manure to balance labor, 35 per cent. on the investment. These tests were carefully conducted, and all food consumed accurately weighed.

FINANCIAL CONDITION OF FARM.

In my report of December 1, 1883, I stated that the College farm would be self-sustaining from that time and pay for student labor on the farm. As already stated the losses in stock by deaths, failure to breed, etc., due to acclimating the cattle of our pure breeds, has delayed the returns from sales that we had looked for. The cost of improving the farm and placing the land in profitable working condition has also exceeded our estimates, and with other work, required more time than was thought would be necessary. We have, however, succeeded in bringing the farm up to the point of returning a profit, and our pure bred stock are finally in condition to make handsome returns, notwithstanding the depreciation in value of live stock of all kinds throughout the country.

[CORRECTION—For "oats and straw," 4th line from bottom of preceding page, read: and oat-straw.]

The Secretary's report shows that the expenditures of the Department for the two years are as follows:

Labor of men, foremen, teamsters	$ 4,106 93
Labor of students charged to farm	937 52
Stock purchases	3,021 05
Rent on land occupied by farm	415 00
Office stationery, etc	29 20
Machinery and implements	510 64
Permanent improvements	160 76
Seeds	374 49
Fences	93 51
Fertilizers	168 80
Teams	81 92
	$ 8,898 82

RECEIPTS.

Sale of cattle	$ 985 00
Sale of beef	2,247 74
Sale of milk	2,293 37

Sale of butter	531 96	
Field crops	814 50	
		—$ 6,852 57
Increase in value of farm property as per inventory, stock produce, etc		$ 7,777 50
Increase in value of land as per appraisement, $8,922.50.		
We can justly claim from the improved condition of the farm for cropping and stock		5,500 00
Balance in favor of farm	11,231 25	
	$20,130 07	—$20,130 07

If from the amount credited to the farm in above statement,	11,231 25
Be deducted, cost of student labor,	4,855 88
We still have a balance of	$ 6,375 37

THE CREAMERY.

The College Creamery has been in successful operation since last spring.

Milk from the College cows and from cows owned in vicinity of the College is worked up daily, and the butter shipped to market. The patrons are so well pleased with the returns from milk brought to the creamery that they, one and all, are increasing the number of cows, and the number of patrons will be doubled in the spring. The College is entitled to the credit of being the first to show from actual trial extending through an entire summer, that a creamery can be made profitable to its patrons in this State, and butter of a quality that excels best western butter, made and delivered in good condition in market. The use of the cream separator, carrying of milk from one to three miles to the creamery, temperature of raising cream, etc., were unsolved problems in this State. Much had to be learned and there is yet room for improvement.

We have shown that where milk from a sufficient number of cows can be secured and a sufficient amount of good water either cistern or well water, by using the separator and a small quantity of ice, first-class butter can be made. With a flowing well or ample supply of water that will remain under 65° temperature, the ice can be dispensed with. The College expended some $1,000 in constructing an underground dairy room with tunnel to supply cold air, to find that such an arrangement is not a necessity for good work. The sub-earth ventilating duct has not given satisfaction. The total cost of creamery building, ventilating tunnel and engine and machinery has cost $3,000. With our experience we could now put up a creamery with equal capacity, that would do as good work for $1,500.

This investment for experience is being taken advantage of by parties in several localities in the State, who are getting ready to start creameries. The experiment, if it may be called an experiment, has called the attention of farmers to a new industry that can be made a source of profit on the farm, and shows:

1st. That creameries may be successfully established in the State.

2d. That butter of as good quality and as great a yield can be made here, and that it will stand shipment during the summer months, as well as the best Western butter.

3d. That our pastures and stock produce as rich milk as is made in what was formerly known as the "dairy belt."

4th. The patrons find it profitable to patronize the creamey.

THE RESULTS OF THE WORK OF THE COLLEGE.

1st. A majority of the students who have spent one, two and three, or more years at the College, have gone home to work on the farm, and a majority of the students now present express an intention of doing the same after they leave the College. The faculty is looked upon as a bureau of information on agricultural topics by farmers from all over the State, and the work in the industrial departments is universally commended. The influence of the College upon the adjacent county is shown in the erection of 21 silos in the county during the past 18 months by parties who have been watching the work of the College. Our plan of drainage, methods of planting and working crops, feeding of cattle, and work generally, is being copied. Our students are becoming more and more interested in the practical work of the farm each year, and volunteer special students in agriculture are constantly increasing in number. Among the latter is a recent graduate of the Alabama University. The outlook for the College is exceedingly promising, and if it receives the liberal support in the future that has been given in the past, the value of its work to the State will be appreciated more and more with each succeeding year.

F. A. GULLEY,
Prof. of Agriculture and Supt. Farm.

REPORT OF THE DEPARTMENT OF CHEMISTRY.

Gen. S. D. Lee, President A. & M. College:

DEAR SIR: In reviewing the progress of the Department of Chemistry during the past two years, I find much that is encouraging.

The Laboratory building having been damaged to some extent by the tornado that struck our grounds during the session of the last Legislature, was repaired from the appropriation made for that purpose. Outside of this, there was no legislative appropriation made for the development of this department, and hence I can only report the steady, though slow growth, taking place through the judicious application of such small sums as become available from time to time from other sources.

The necessary repairs to the building have consumed a large share of these, which, together with the usual breakage of glassware, and chemicals consumed, has used up most of the remainder. We have, however, added some apparatus, and with the assistance of a small appropriation by the Board, fitted up a large room in the basement, where, in future, the State Chemist will carry on his analytical work. Other rooms are partially finished, and we probably have on hand lumber sufficient to complete the proposed improvements. We hope to accomplish this before the end of December next, as we shall need them by that time, in order to give our present large Sophomore class-room to study chemical analysis. When these additions are finished we will have accommodations for sixty students in qualitative analysis, and for ten or more in quantitative analysis.

We now have facilities for carrying on all of the ordinary analytical work of an agricultural chemical laboratory. And our development in future will be directed to perfecting the present arrangements and keeping abreast with the advances made in this department of science.

We are provided with complete outfits for the analysis of soils, fertilizers, feed stuffs, milk, sugar, wine, and for assaying and carrying on any of the analyses of commercial products that may be sent in for analysis. We are well provided with platinum, porcelain, and glass-ware. Our cases, work tables, water-pipes, etc., have been largely increased since our last biennial report.

Our chemical apparatus is of the best and latest construction, and we doubt whether a student of Agricultural Chemistry can find better facilities anywhere in this country than those offered at this institution.

Our physical apparatus is less complete and should receive a liberal appropriation in order to increase it at the earliest possible moment. As it is at present, we are able to illustrate only a part of the subjects treated of in the course in elementary Natural Philosophy, being virtually without means of illustrating the subjects treated of in the course in Chemical Physics.

We have a fairly complete set of Meteoroligical instruments, our most urgent need in this direction being an Anemometer with the attachments, costing about $75.

Nearly all of the apparatus required is of the more expensive kind, and cannot be purchased until we have money in considerable sums at our command, as many of the instruments required cost not less than $100.00 each. This is the greatest need of my department at present, and should receive the earnest attention of the authorities at the earliest convenient time. We have probably a greater number of students here than any institution in the State, and as they belong to that class of young men who, more than any others, require the practical application of science as it is taught to them, it does seem to me that it is not asking too much that they have at least equal facilities in this department, to those offered at our State University in the same department.

THE COURSE OF INSTRUCTION IN THIS DEPARTMENT IS :

First term, Senior class. Meterology, by lectures.

First term, Sophomore class. Elementary Chemistry, by text-book and lectures.

First term, Freshman class. Natural Philosophy, by text-book.

Second term, Junior class. Chemical Physics, lectures and text-book.

Second term, Sophomore class. Practical Chemistry, blowpipe analysis.

Second term. Sophomore class. Practical Chemistry, wet analysis.

Third term, Junior class. Agricultural Chemistry, lectures.

All recitations one hour a day except for the Sophomore class in the second and third terms, when they spend two hours daily at work in the laboratory.

Besides the regular College classes I have one student taking a special course in Pharmaceutical Chemistry, and one taking a post-graduate course in Agricultural Chemistry.

All of the students in my department are enthusiastic and extremely industrious and leave nothing to be desired in their conscientious endeavors to come up to all of the requirements of the department. I do not believe that students anywhere can be persuaded or forced to do more than they are doing here. The determination to succeed appears to permeate every individual in my classes, and I look forward with pleasure to the time when these young men shall go forth into the State to apply principles learned here with the same diligence, and that too with clear ideas of what they wish to accomplish. It may be a day-dream, but I cannot forego the pleasure of telling you with what satisfaction I view the unfolding minds of these students.

The Freshman class is so large that it has been found necessary to detail Mr. Harrington, my assistant for the past three years, to assist in teaching. He has conducted the work well and deserves the highest commendation.

THE EXPOSITION.

The Chemical Department last year made an exhibit of apparatus of various kinds, together with various chemical products and all of the commercial fertilizers sold in the State; thus contributing its share to the success of the College exhibit at the World's Cotton Exposition.

In May, 1885, together with yourself I visited the Exposition, where we effected a large number of exchanges for our Museum, securing much of value. It is to be regretted that some more systematic plan was not followed than the time at our disposal then permitted, as it was one of those rare opportunities of securing a fine collection illustrating many of the industrial enterprises and processes of various sections of our own, and also of foreign countries. Perhaps it is not too late even now to avail ourselves of the facilities presented by the present Exposition for this purpose.

FARMERS' INSTITUTES.

With one exception, I believe that I have attended all of the Farmers' Institutes held in the State by our Faculty. Perhaps nothing undertaken by the College is attended with better results than these have been and would be, if provision could be made so that they could be held in every county in the State. By this means we have been enabled to come very close to the farmers, and not only find what their various needs are, but also to give them information which at present has not appeared in a form accessible to the most of them. Besides this, it enables us to correct any error that our statements might lead to, on the spot. In all parts of the State that we have visited, we have been faced by the same problems, all of which are at present weighing heavily upon the minds of our farmers. Such as: "What shall we do to restore our worn out lands?" "How shall we increase and retain the productiveness of our soils?" "What are the best fertilizers and how to use them?" "What grasses are best suited to this climate, and how should they be cultivated?" "What breeds of stock are best suited to the State, and how should ensilage be prepared and preserved?" These questions and many others of a similar character have been asked I believe at every Institute, and the seriousness with which they are put, shows how earnest the farmers are to acquire available information upon these subjects.

The preparations of the addresses for these institutes involves an enormous amount of work, which, although not properly a part of the work of the Professors, has been done without stint, and its effect is being felt, I think everywhere that we have gone. I believe that if the Faculty could visit every county in the State, and arouse the farmers to the proper appreciation of the advantages of our State in many directions, as has been done in those localities that we have visited, the time is not far distant when the system of diversified farming and stock-raising beginning to start there will rapidly spread over the State and insure the people of the State from the terrible depression caused by a failure of the cotton crop.

The needs of the farmers of Mississippi, as they have impressed themselves upon me in my intercourse with them at these institutes, are not such as cannot be met, and if we can arouse the mass of them to see that there is "life in the old land yet," and that they can, if they will go about it right, become more pros perous than they have ever been, I for one, shall not regret the time that has been spent with yourself and others of the Faculty in earnest effort to change and elevate the agriculture of the State.

METEOROLOGICAL OBSERVATIONS.

In connection with my work in my department, I have caused regular meteorological observations to be taken three times a day, according to the United States Signal Service regulations, for the past eighteen months, since near the time when the government abandoned the station that was located at this place.

MONTHLY REGISTER OF METEOROLOGICAL OBSERVATIONS,

Adopted by the A. & M. College of Mississippi.

MONTH AND YEAR.	Thermometer in open air—average per month..	Psychrometer—Av'ge per mon.	Relative humidity, or per cent. of saturation—Av'ge per mon.	Pressure of vapor in inches, Average per month..........	Barometer reduced to freezing point, average per month.	Registering thermometer, minimun average per month,.....	Rain fall per month........	Snow fall per month—Inches.
May, 1884	70.7	Wet bulb 65.	72.6	.765	29.488	61.7	.8	....
June, 1884	75.4	Wet bulb 79.3	80.7	.892	29.465	60.7	3.39	....
July, 1884	80.6	Wet bulb 75.8	77.8	1.072	29.447	71.8	4.7	....
Aug'st, 1884	79.06	Wet bulb 71.7	69.9	1.008	29.528	67.	1.6	....
Sept'r, 1884	79.06	Wet bulb 71.5	62.6	1.008	29.570	67.4	.2	....
Oct'b'r, 1884	70.1	Wet bulb 63.7	67.6	.784	29.686	57.3	1.2	....
Nov'r, 1884	51.9	Wet bulb 47.3	72.	.414	29.733	48.8	3.35	....
Dec'br, 1884	46.19	Wet bulb 43.6	49.5	.330	29.717	43.2	3.5	1-20
Jan'y, 1885	39.8	Wet bulb 38.3	76.1	.272	29.770	26.1	4.62	½
Febr'y, 1885	40.6	Wet bulb 38.4	77.5	.296	29.644	29.2	1.62	9 ¾
March, 1885	49.6	Wet bulb 44.8	68.6	.366	29.716	36.4	2·6	....
April, 1885	64.8	Wet bulb 57.0	67.8	.634	29.636	52.8	4.85	....
May, 1885	69.2	Wet bulb 66.5	68.4	.739	29.535	57.09	4.6	....
June, 1885	82.6	Wet bulb 73.5	73.4	1.019	29.635	70.3	3.4	....
July, 1885	81.	Wet bulb 74.6	71.7	1.194	29.614	69.02	3.1	....
Aug'st, 1885	80.3	Wet bulb 73.2	68.4	1.058	29.572	69.3	2.	....
Sept'r, 1885	74.3	Wet bulb 70.8	76.9	.869	29.577	47.16	4.1	....
Sum	1135.21	Wet bulb 1046.9	1202.5	12.826	503.333	935.27	49.63	10.45
Average	66.77	61.58	70.73	.754	29.607	55.01	2.91	....

MONTHLY REGISTER OF METEOROLOGICAL OBSERVATIONS,—Continued.

Adopted by the A. & M. College of Mississippi.

MONTH OF THE YEAR.	Hotest day.........	Coldest day.........	Maximum temperature, Degrees...	Minimum temperature, Degrees....	Greatest fall of rain on any one day in inches..........	Average temperature for the m'th, Degrees..........	Total rainfall for the month, in inches..........
May, 1884..................	11	30	86	54	2-5	70.7	8-10
June, 1884..................	22	2	92	57	9-10	75.4	3.39
July, 1884..................	23	28	92	66	1	80.6	4.7
August, 1884..............	27	6	86	58	8-10	79.6	1.6
September, 1884..........	30	1	93	62	2-10	79.06	2-10
October, 1884..............	5	24	94	†34	7-10	70.1	1 2-10
November, 1884	3	8	73	29	1¼	57.9	3.35
December, 1884..	30	27	66	12	1 2-10	46.19	3½
January, 1885............	11	2	68	9	1 7-10	39.8	4.62
February, 1885...........	3	11	67	10	9½	40	9¾
March, 1885...............	28	*24	69	21	1 1-10	49.6	2.6
April, 1885	18	9	85	‡42	1½	64.8	4.85
May, 1885................	25	11	88	51	3 3-5	69.2	4 3-5
June, 1885	6	1	94	63	2	82.6	5 2-5
July, 1885..................	36	2	94	66	1½	81	3.1
August, 1885	10	27	96	59	1	80.3	2
September, 1885	17	24	88	51	1½	73.3	4.1

*Snow. †Frost. ‡Slight frost.

Of course, in a report of the character of this one, it is not possible for me to give all of the observations, but from those on file here, I give a summary of the most prominent points of interest connected with them. The observations have been made by Mr. S. A. Morris, one of the present Senior Class, and in this connection, I would commend him for his care, regularity and perseverance in carrying on this work.

Means should be provided, I think, for the publication of the reports of the various kinds of work going on at the College, so as to make it accessible to the farmers of the State and others who may take an interest in it. I think that we could profitably issue a bi-monthly bulletin, or if that is impracticable, an annual report, giving minutely the conditions under which we carry on our work and the results. The frequent calls that we have for such publications indicate a public demand for them, which should be met.

There is a growing correspondence with the farmers of the State which draws heavily upon our time and which could be better attended to by the public discussion of the difficulties that occur to any one. The same information is often required by several men at nearly the same time, and by the use of these publications it would be possible to give each one applying for information, what he wanted, together with much other matter of value to him.

There is a large amount of analytical work sent in here under the impression that this is a *free laboratory*, where every one "having a curiosity which he does not understand" can have it tested for the gratification of having it done. *This is not the case*, and the Board has not made any provision for such a wastage of time and chemicals—as they certainly should not do. We hold ourselves in readiness to investigate any matter that demands the work of the analytical chemist, but we do not do it for the amusement that it is supposed to afford, and expect all persons who send in samples for analysis to remit an amount equal to cover the charges for the work required. The only exception to this will be matters strictly connected with the farmer's agricultural interests, to which we always give such attention as we feel will best serve their interests, and protect us from unnecessary imposition. It is not the policy of the Board, as indicated to me, that we should permit any one to make too heavy demands upon either our time or treasury in gratuitous analytical work, and whenever any one chooses to avail himself of the provisions made, we trust that he will remember that every ounce of chemicals spent in useless tests is so much loss; also that while it probably would not cost very much to make a few tests for him, that when a large number demand this it soon counts up to an amount that would tax the laboratory beyond the resources at its command; hence the self-protective policy is the one necessary for us to follow.

I am under obligations to the young men who in various capacities assist me in carrying on successfully the work of my department. They are Messrs. H. H. Harrington, W. C. Welborn, S. A. Morris and B. W. Kilgore, all of them students, except Mr. Harrington, who has taken his Master's Degree under me.

The policy of the department being to train up reliable help from among the students coming under my charge, and as far as it lies in my power to promote them as they become proficient. This policy will also lead to the more perfect preparation of young men who will be well qualified to take an active part in the future industrial development of the State and of the South.

I am also deeply indebted to you, my dear General, for your uniform interest in my work and untiring efforts to place everything in your power in the most favorable conditions to contribute to our advancement, and the most rapid achievement of successful results.

I feel that whatever success has crowned our efforts, and pushed us to a position where we may look with pride upon a more surprising development in the time perhaps, than any other Agricultural College in this country, is due very largely to your powers of organization, and of inspiring enthusiasm and confidence in those under you, so that all work for the attainment of the one object, *success*.

Respectfully submitted, JOHN A. MYERS,
Professor of Chemistry.

Agricultural College, Nov. 14th, 1885.

REPORT OF WM. L. BUCK,

2D LIEUTENANT 13TH INFANTRY, IN CHARGE OF THE MILITARY DEPARTMENT AT A. AND M. COLLEGE, MISS.

A. AND M. COLLEGE, MISS.,
November 14, 1885.

To Gen. S. D. Lee, President:

SIR: I have the honor to submit the three (3) following reports of work done in the Military Department since the State Legislature convened in 1883:

(*a.*) As Commandant of Students.
(*b.*) As Inspector of Commons.
(*c.*) As Professor of Military Science and Tactics.

(*a.*) AS COMMANDANT OF STUDENTS.

On arriving at the College from my summer leaves of absence, I reported to you for duty and assumed control of the Military organization. The five (5) companies were organized as soon as practicable, and on recommendation of the Commandant, officers and non-commissioned officers were appointed by you. Quarters were assigned to the companies in the Dormitory.

INVENTORY AND CARE OF ARMS AND EQUIPMENTS.

(Session 1883-'4.)

The arms and equipments were moved into the new armory, which has been found to be much more convenient than the two old rooms used as armories in previous years. The Quartermaster took an accurate inventory of them, and the result was reported to you. Receipts were taken for all arms and equipments issued to students.

The arms and equipments are in the same armory as last year. An accurate inventory has been taken by the Quartermaster and forwarded to you. The same care is taken in the issuing of arms and equipments to students.

(Session 1885 to November 14, 1885.)

Armories have been constructed, one in each company, and arms and equipments transferred from the old armory. The present is the most convenient arrangement yet devised. Receipts are taken for arms and equipments issued. The Quartermaster has just made an accurate inventory; a copy of which was forwarded to you.

DAMAGES TO PUBLIC PROPERTY.

Once per week the Quartermaster inspects the Dormitory and reports in writing all damage done to public property, in order that it may be repaired and the cost charged to the student responsible—when known.

PRACTICAL MILITARY INSTRUCTION.

(1.) Artillery drills.
(2.) Infantry drills.
(3.) Target practice.

(1.) ARTILLERY DRILLS.

(Session 1883–'4.)

The cannon was fired at reveille and retreat, from May 28, to June 4, 1884.

(Session 1884–'5.)

Students of the Senior and Junior classes, respectively, have been practiced in the manual of the field piece, and at drills have fired the allowance of blank charges furnished by the U. S Government to this College. The firing was skillfully done, without accident of any kind.

(Session 1885, to Nov. 14, 1885.)

There has been no artillery drill to date.

(2.) INFANTRY DRILLS.

(Session 1883–'4.)

During the winter but little attention could be paid to drills on account of the inclemency of the weather, the consequent poor condition of the drill grounds, and the necessity of utilizing the labor of the students in repairing the damage done to College property by a cyclone; but in the spring there were company and battalion drills, producing excellent results by reason of increased interest on the part of the students.

(Session 1884–'5.)

The whole body of students received practical instruction in Company and Battalion Drills, respectively, Dress Parade, Review and Battalion inspection. From March 2, to March 16, 1885, as a preparation for the trip to the New Orleans Exposition, the Battalion and Companies were drilled daily (Sunday excepted).

The drill of the students, in consequence, was better than at any time since my connection with the College—March 16, 1883. The purchase by the College of a battalion flag (not expensive) and the institution of a "Color Guard" have materially increased the interest in military duties and drills.

(Session 1885, to November 14, 1885.)

The companies have been drilled in the setting-up exercises and company drill.

(3.) TARGET PRACTICE.

(Session 1883–'4.)

By your direction, I took out to target practice members of the Senior and Junior classes, respectively, on a range about two miles from the College. They practiced at 50 yds., 100 yds., 150 yds. and 200 yds., and excellent results were obtained. Great interest was manifested, but objection is made to the distance of the range from the College.

There has been no target practice since 1883–'4, as no range has been found conveniently near the College.

DEMERITS.

(Session 1883-'84.)

During this session the following scheme was introduced. For every month during which a student receives less than 8 demerits he obtains a credit of the difference between the number received and 8. These credits are substracted from demerits of past months, when any are charged against the student. This system encourages good conduct and affords a means of relief to a student who is nearly deficient on demerits. It has worked well.

(Session 1884-'85, and to November 14, 1885.)

The same system has given excellent results and the per cent. of number of demerits to the whole number of students is lower than any previous year.

DISCIPLINE.

(Session 1883-'84.)

The discipline of the students as a whole was very good, but it was necessary to make examples in several cases for gross violation of College regulations. For the first time the better class of students, those in favor of strict discipline, are in the ascendancy, as shown by public opinion among the students, compelling six or eight of their number to come forward and acknowledge an offense, putting a calf in the dormitory, rather than that the hall orderlies should be punished. This was brought about by the stand taken by the Faculty, that the hall orderlies would be punished in all cases, unless the guilty parties confessed their guilt and came forward to serve the punishment. Previous to this session disorders of the above character were very frequent.

(Session 1884-'85.)

The discipline of the students was excellent as shown by their daily conduct, the record in the Secretary's office, and especially by their good behavior and soldierly bearing while at the New Orleans Exposition from March 16 to 23, 1885. The commandant feels that the State may well feel proud of the conduct of the students of the A. and M. College when subjected to the most severe test of discipline possible. In the dormitory, during previous sessions, there have been frequent disorders, while there has not been a single case of disorder this session (1884-'5). There have been fewer reports and demerits than ever before, and no student has received 100 demerits for the half (½) session, (the number necessary to dismiss). For offenses during the session 1883-'84 there were ten students dismissed, whereas in the session 1884-'85 there were only two.

(Session 1885-'86, to November 14, 1885.)

The discipline is excellent. The first monthly list of demerits shows a smaller number of demerits for old students than that of any previous year. The spirit of obedience to proper authority and College regulations thoroughly permeates the body of students to an extent never before reached. The students themselves appreciate the advantages of good discipline, and assist in its preservation.

RECOMMENDATION.

In my report for session 1883–'84, I recommended, as did the President, the division of the dormitory, by wooden partitions, into separate company quarters, in order the better to fix responsibility and more easily control the students. This was done during the summer of 1884, and to it may in large measure be attributed the present efficient control of the students in the dormitory. I also recommended that students in the dormitory be compelled to buy metal lamps instead of glass, in order to prevent fire by accident. These lamps have been procured and issued to students.

THE RESTLESSNESS OF STUDENTS,

(Session 1884–5), was much less than during sessions prior to this; students were better contented, and a larger per cent. remained at the College during the whole session, as shown by the following table, compiled from the records in the Secretary's office:

	SESSIONS.				
	1880 & 1881	1881 & 1882	1882 & 1883	1883 & 1884	1884 & 1885
Whole number of Students during the year........	354	304	317	257	291
Number present at College May 1st, of each year	129	166	190	155	226
Number who left College prior to May 1st, of each year..	225	138	127	102	65
Per cent. of whole number during the session of those who left prior to May 1st, of each year...	63	45	40	39	22

There have reported this session, to date, 364; there are present 339; only 25 have left since 16th September, 1885—only 6 9-10 per cent., say 7 per cent. From experience of previous years, in the number who left the first six weeks or two months of the session, the per cent. for this *whole* session, of those who leave College to the number who report during that time, will not be over 15 per cent.. against 22 per cent. last session.

From this data it will be seen that there has been a constant *decrease* in the per cent. of the number of students who *leave* the College before the end of the session, from 63 per cent. in 1880–1, to 22 per cent. in 1884–5, and the present session (estimated) 15 per cent. There has been a consequent *increase*, constant and steady, of the per cent of students who remain at College during the whole session. For the present session there have reported in *two* months more than during any previous *nine* months of the College's existence.

(b). AS INSPECTOR OF COMMONS.

I desire to report that the mess hall arrangements are in excellent order, the table furniture clean and the service good.

The food is substantial, well cooked and abundant. The price of board *cheap* for the character and quantity of food furnished. In consequence of which, I have not received a single complaint from students during the sessions since November, 1883. The former Steward and his successor, I heartily commend for their ability as such, and to the Purchasing Agent of the College much credit is due for economy and business judgment in buying commissary stores and supplies.

(CO.) AS PROFESSOR OF MILITARY SCIENCE AND TACTICS.

By virtue of an Act of Congress, the Military Department in every Agricultural and Mechanical College accepting assistance from the United States Government is obligatory, in that to the gift of land is joined the condition that certain branches of science shall be taught, *including military tactics.* To educate its citizen soldiery in the science and art of war—since on *them* our country will *mainly* depend—the General Government has detached from line service (40) forty officers of the regular army, who are detailed, for a period of (3) three years, to act as Professors of Military Science and Tactics in the colleges above mentioned. For acquiring practical military knowledge and instruc-instruction, the United States Government has furnished, on application, to each of these colleges, two field pieces with equipments and ammunition, and one hundred and fifty (150) cadet Springfield rifles, with blank and ball cartridges. At the end of every three months the Adjutant General of the United States Army requires of the officers so detailed a report of the progress made, together with the interest taken in military instruction and drills, by the Faculty and students, and the character of the *discipline* at these forty (40) colleges.

As a matter for your information, thinking it will be of interest, I copy from the Annual Report (of the Adjutant General of the United States Army), for this year, just published:

EXTRACT.

"The appreciation by Congress of the value of military instruction to the youths of the land is evidenced by the law passed last year increasing to forty the number of officers of the army that can be detailed for this important duty.

* * * * * * * * *

Section 1225 of the Revised Statutes, in authorizing the detail of an officer of the army, provides that the officer selected shall act as President, Superintendent or Professor, and that the institution selected shall have capacity to educate, at the same time, not less than 150 male students.

* * * * * * * * *

I beg to invite your attention to the second table herewith, which shows that but twelve of the institutions named therein have an average attendance of over 150 male pupils, while at fourteen colleges it is under 100 and at five others it is less than 60. It is recommended that, if necessary to prevent cavil, the law be amended to require that applications for the detail of a Military Professor be accompanied by satisfactory proof that at least 150 male pupils above the age of fifteen are actually present at the institution.

* * * * * * * * *

The interest manifested by the Faculty of the several universities and colleges is entirely satisfactory in some cases, but in many others would indicate that the details were secured to obtain the services of an officer proficient in mathematics, as a professor in that branch, and that his value as a military instructor is appreciated *purely from a disciplinarian point of view.* This limited interest is deemed entirely inadequate to justify the expense and inconvenience of such details."

The Professor of Military Tactics here does enjoy the privilege recommended, receives the "full and active co-operation of the President and Faculty," and *this College is one of the twelve* having "an average attendance of one hundred and fifty (150) male students."

THEORETICAL INSTRUCTION.

(Session 1883–'4.)

As Professor of Military Science and Tactics, I instructed the Senior and Junior classes respectively. The former by lectures in military science during the 2d term, the latter by recitations in Infantry tactics during the 3d term.

(Session 1884–'5.)

Students of the Senior class were taught military science by lectures on Tuesdays and Thursdays of each week during the 3d term. Instruction was given the Junior class by recitations in Infantry tactics on Mondays, Wednesdays and Fridays of each week during the 3d term.

(Session 1885–'6, to November 14, 1885.)

There has been no theoretical instruction in the Military Department to date.

PRACTICAL INSTRUCTION.

I superintend the company drills as often as I consider necessary, and myself drill the battalion, and always supervise the artillery practice.

THE MILITARY DEPARTMENT,

Has confined itself to the limits demanded by an Agricultural and Mechanical College, and has always given way to the Industrial Departments where its interests conflicted, nor has there ever been a desire other than to carry out the letter and spirit of the acts of Congress and of the State of Mississippi in the establishment of this department at this College.

IN CONCLUSION.

Thanking the President, Faculty, Students and Officers, for their co-operation and assistance in the performance of my duties,

I am, very respectfully, your obedient servant,

WM. L. BUCK,
2d Lieut. 13th Infantry,
Prof. of Military Science and Tactics,
Commandant of Students and Inspector of Commons.

A. & M. COLLEGE OF MISSISSIPPI,
November 13, 1885.

Gen. S. D. Lee, President:

DEAR SIR: I respectfully submit the following report of the Department of English, embracing a history of the work done and of the changes made during the two years that have elapsed since my first report, November 14, 1883.

SCOPE.

The Department of English embraces a thorough study of the English sentence, both by analysis and synthesis; English history; rhetoric; the etymology and history of the English language; the history of English literature; the general history of mankind; the history of the world's literature in outline; the art of literary criticism; declamation; the preparation of essays, addresses, and orations; a post-graduate course in English classics. To these subjects have been added, by assignment, moral science, political economy, the Constitution of the United States; and, in the post-graduate course, psychology, and logic.

The following tabulated statement exhibits

THE WORK DONE.

SENIORS.

1883–'84.

STUDIES AND ORIGINAL WORK.	Enrolled...	Examined..	Passed...
1. Moral Science	9	9	9
2. Constitution of the United States	11	9	9
3. Political Economy	12	10	10
4. English Literature and Criticism	9	9	9
5. Fifty-five (55) original papers examined			

1884–'85.

STUDIES AND ORIGINAL WORK.	Enrolled...	Examined.	Passed ...
1. Moral Science..	11	11	11
2. Constitution of the United States..................	12	11	11
3. Political Economy..............................	11	11	11
4. General Literature and Criticism.....................	11	11	11
5. Sixty-four (64) original papers examined............			

1885–'86.

STUDIES AND ORIGINAL WORK.	Enrolled...	Examined.	Passed...
1. Moral Science..	12	12	12
2. Twenty-four (24) papers examined................			

JUNIORS.

1883–'84.

STUDIES AND ORIGINAL WORK.	Enrolled...	Examined.	Passed...
1. English Literature..	16	16	16
2. Physical Geography.....................................	16	15	15
3. Forty-eight (48) papers examined........................			

1884–'85.

STUDIES AND ORIGINAL WORK.	Enrolled...	Examined.	Passed...
1. English Literature..	14	13	11
2. Thirty-five (35) papers examined..................			

1885–'86.

STUDIES AND ORIGINAL WORK.	Enrolled...	Examined.	Passed...
1. The Junior Class are..........	21		
now engaged in the preparation of original addresses to be delivered during the 2d term..........			

SOPHOMORE.

1883–'84.

STUDIES AND ORIGINAL WORK.	Enrolled...	Examined.	Passed...
1. Rhetoric..........	26	20	18
2. Etymology and History of English..........	23	20	16
3. Two hundred and forty (240) papers..........			
4. One declamation for each member before the entire body of students..........			

1884–'85.

STUDIES AND ORIGINAL WORK.	Enrolled...	Examined.	Passed...
1. Rhetoric..........	33	31	31
2. Etymology and History of English..........	33	28	22
3. Four hundred and sixty-five (465) papers examined..			
4. One declamation for each member present before the Faculty and Students..........			

1884–'85.

STUDIES AND ORIGINAL WORK.	Enrolled...	Examined.	Passed...
1. Rhetoric (now in progress)..........	63		
2. Two hundred and fifty-two (252) papers examined...			
3. Twenty-six (26) declamations rehearsed..........			

FRESHMAN.

1883–'84.

STUDIES AND ORIGINAL WORK.	Enrolled..	Examined.	Passed...
1. Higher English (half session)	60	31	26
2. General History	25	21	20
3. 416 papers examined			
4. 410 declamations rehearsed			

1884–'85.

STUDIES AND ORIGINAL WORK.	Enrolled..	Examined.	Passed...
1. Higher English (entire session)	64	48	40
2. General History	55	38	25
3. 960 papers examined			
4. 920 declamations rehearsed			

1885–'86.

STUDIES AND ORIGINAL WORK.	Enrolled...	Examined.	Passed...
1. Higher English	84		
2. 252 papers examined			
3. 252 declamations rehearsed			

POST-GRADUATES.

1883–'84.

	No. enrolled.	No. passed...
1. Logic	3	3
2. Papers examined—twenty-four (24)		

1884–'85.

	No. enrolled.	No. passed...
1. Psychology	4	3
2. Papers examined—twenty (20)		

1885–'86.

	No. enrolled.	No. passed...
1. Logic	6	

It will be seen from the foregoing table, that the percentage based on a comparison of the number of students enrolled with the number that pass creditable examinations is much greater in the Junior and Senior classes than in the Freshman and Sophomore. This is natural, and to be accounted for by the increased mental development of those classes having the greater percentage of creditable examinations, and to the sifting process that is constantly going on, which eliminates the lazy or the hopelessly dull.

It is a notorious fact that students come to our College better prepared in mathematics than in English. The latter is not taught in our public or private schools so well as is mathematics, and hence my department labors under peculiar disadvantages. There is another cause for this lack of knowledge of our own tongue resulting from the fact that fathers and guardians *encourage* their sons and wards to devote the largest portion of their time in the common school to the study of arithmetic. This mistaken idea develops one-sided intellects. A year ago, the Faculty of this College, at the request of the President and the head of the Department of English, gave four and a half months additional to English in the Freshman year. The wisdom of this action is shown by reference to the tabulated statement above. In the session of 1883–'84, it will be observed, out of an enrollment of sixty (60) in Higher English, only twenty-six passed the final examination, while in 1884–'85, after the change was made, sixty-four (64) were enrolled, and forty (40) passed creditable examinations, and that too when many of this class were not able to be present at the final examination on account of measles.

The instruction in general history has never been satisfactory.

It will be noticed that in 1883–'84, out of an enrollment of sixty Freshmen, only twenty-five (25) took general history. This is accounted for by the following facts: 1. History is taught during the last term when a small number of students is present. 2. Parents discourage the study of history, thinking that a knowledge of it can be obtained by private reading. 3. The study of general history is not adapted to the undeveloped intellect of the average first-year student, who finds it impossible to follow clearly the many interlacing threads of national story that go to make up the closely woven web of the world's history. At my request, the Faculty have allowed me to substitute English history for universal history in the Freshman year, and to transfer the subject of universal history to the Junior year.

Believing in the Baconian maxim, "Writing makes an accurate man," I have required a great number of written exercises, compositions, essays, etc., from all students instructed in this department. It will be seen by reference to the table that over a thousand papers, on an average, were examined annually during the two years covered by this report. If the attendance during the present session continues to be as large as at present, the number of papers to be examined, corrected, or criticised, will approximate very closely to 4,000. This is the most onerous of all the duties devolving upon the instructors in this department, and I consider it one of the most important.

MEANS OF ILLUSTRATION.

The means of illustration in my department are not sufficient for the most complete instruction. There is in the Library no complete collection of authors illustrating the different periods of English literature; there are but few, if any, biographies—a class of books particularly attractive to the young student of history; there are no historical charts, maps, etc., by which to render the study of history less difficult and irksome; I recommend that the Legislature be asked to make an appropriation for the thorough equipment of this department.

PREPARATORY DEPARTMENT.

During the sessions of 1883–'84 and 1884–'85, the professors of Mathematics and English were placed by the Board of Trustees in charge of the Preparatory Department. The studies in English were distributed through a two-years course, and the instruction was either supervised by me or given in person. At the last meeting of the Board of Trustees, the professors of Mathematics and English were relieved of this supervision.

In conclusion, I wish to express my appreciation of the zealous and able instruction of Prof. Dabney Lipscomb, who was adjunct professor of English during the sessions of 1883–'84 and 1884–'85; and also to express my entire confidence in his successor, Prof. A. A. Kincannon, who was assigned to duty in my department at the last meeting of the Board of Trustees.

The above report is respectfully submitted.

W. H. MAGRUDER,
Professor of English.

REPORT OF WM. L. BUCK,

2D LIEUT. 13TH INFANTRY, ACTING PROF. OF MATHEMATICS.

A. & M. COLLEGE, MISS.,
Nov. 10, 1885.

Gen. S. D. Lee, President:

SIR: I have the honor to submit the following report of my duties as Acting Prof. of Mathematics:

COLLEGE CLASSES.

SESSION 1884–5.

Senior Class.—The Senior Class (11) was instructed during the 1*st term* in Astronomy and Spherical Trigonometry, and *all* passed on the average of examination and marks received for daily recitations.

During the *second term* ten of them were taught Civil Engineering, which they passed successfully on combined average of examination and monthly grade marks.

SESSION 1885–6.

The present Senior Class has (12) twelve members. They have recited on Astronomy from Sept. 16 to Nov. 1st. None were deficient, and the average grade was very good.

SESSION 1884–5.

Junior Class.—The Junior Class studied Analytical Geometry and Mechanics during 1st and 2d terms. The class numbered 13 during the first, and 11 during the second term. None were found deficient.

SESSION 1885–6.

The present Junior Class has (17) seventeen regular and (1) one irregular member. On monthly report just submitted for Sept. 16th to Octtober 30th, all passed.

SESSION 1884–5.

Sophomore Class.—The Sophomore Class was so large that it was divided into two sections to be instructed in Geometry and Trigonometry. In the first term, the class was taught Plane and Solid Geometry, and by Christmas had passed over and reviewed the whole nine books. The next four weeks the class again reviewed the whole, making *three* times they had passed over this study, and were examined. There were 29 in the class during the first term, which was reduced to 26 during the second term. The average for the 26 on examination in Geometry was 85. Of these 26, 9 received a maximum 100, four 95, and two 90. All passed in Geometry. The class then studied and were examined in Trigonometry. All passed but two.

During the third term this class was taught surveying. They passed over the course laid down in the text book once, and spent a great deal of time in the field with the surveyor's compass, plane table and Y level. The transit and theodolite were so damaged by a fall that they could not be used. You are acquainted with the circumstances. The responsibility for same not resting on my department. On surveying all of the Sophomore Class but two were proficient.

SESSION 1885–6.

Sophomore Class.—The class this year is very large, 47, and are making good progress.

SESSION 1884–5.

Freshman Class.—The Freshman Class, 71 members, was divided into three sections, and so many *remained* during the *whole* session that it was necessary to retain this organization.

The first section studied Algebra during the first and second terms and part of third term; were examined in it and all were proficient. The last three weeks of third term they made good progress in *Geometry*.

The second and third sections studied Algebra during the three terms, and, except those who left on account of an epidemic of measles, were examined, and as large a per cent. as usual were proficient in Algebra. Those who left just before examination were to be examined next session, 1885–6. The class has been taught by the Acting Professor of Mathematics, the Assistant Professor of Mathematics, and at different times by Profs. Lipscomb, Harvey and Kincannon. This wasrendered necessary by the large number of students in the class.

SESSION 1885–6.

Of those to be examined in Algebra from last year, most all passed into the Sophomore Class.

The present Freshman Class is divided as follows: First section, 30; second section, regulars, 14; irregulars, 8. total 22; third section, 18; fourth section 14; total 76 regulars and 8 irregulars in Mathematics.

They are making excellent progress in Algebra. The first and fourth sections are taught by Prof. Walker, Assistant Professor of Mathematics. The second and third sections by Tutor, Mr. J. M. White.

PREPARATORY DEPARTMENT.

SESSION 1884–5.

During the session of 1884–5, the preparatory department was under the supervision of the Professors of English and Mathematics respectively. During the third term the Acting Professor of Mathematics taught the first section, Senior Preparatory, in Arithmetic and examined them. All were proficient but two, and for the three remaining weeks of the term, were taught Algebra. The Professors of English and Mathematics earnestly recommended in their reports that this department be under one head, as the present system was not practicable.

SESSION 1885-6.

This department is now under charge of one head—Prof. Lipscomb.

WORK DONE.

SESSION 1884-5.

By reason of the number of students it was necessary that both the Acting Professor and the Assistant Professor of Mathematics should teach in the Preparatory Department during the session. We have been employed as follows: Acting Professor of Mathematics has taught—

	1st Hour.	2d Hour.	3d Hour.	4th Hour.
1st Term.	Mechanics...	Algebra....	Geometry....	Astronomy...
2d Term.	Mechanics... Arithmetic &	Algebra....	Cv'l Egnineering.........	Geometry and Trigonometry.
3d Term.	Algebra......	....	Military Science & Tac's.	Surveying....

And my assistant, Mr. Walker, as follows:

	1st Hour.	2d Hour.	3d Hour.	4th Hour.
1st Term.	Arithmetic...	Arithmetic.	Geometry....	Algebra......
2d Term.	Arithmetic...	Arithmetic..	Algebra	Geometry and Trigonometry.
3d Term.	Algebra......	Algebra ...	Algebra. ...	Surveying....

For the benefit of students of Freshman Class advanced on trial, there was organized an irregular Arithmetic class, taught in the afternoon by my assistant, Mr. Walker.

By employing the Acting Professor *four* hours and the Assistant Professor *four* hours, it is impossible for the former to give personal attention to the different sections and classes in his Department as required the President and the Board of Trustees.

SESSION 1885-6.

In order that he might give personal supervision to the classes in his department, the Acting Professor of Mathematics this term (first), is employed only two hours, as follows:

	1st Hour.	2d Hour.	3d Hour.	4th Hour.
1st Term.	.. ..	Mechanics	....	Astronomy...

My assistant, Mr. Walker, has taught as follows:

	1st Hour.	2d Hour.	3d Hour.	4th Hour.
1st Term	Geometry....	Algebra...	Geometry....	Algebra.....

In *my Department*, Tutor J. M. White has been employed as follows:

	1st Hour.	2d Hour.	3d Hour.	4th Hour.
1st Term.	Algebra.....	....	Algebra.. ...	....

COMPARISON OF RESULTS

Of work in Mathematics, *first month* of years 1883, 1884 and 1885.

SENIOR CLASS—IN ASTRONOMY.				JUNIOR CLASS—IN MECHANICS.			
Regular Members.				Regular Members.			
Year.	No. in Class.....	No. deficient.....	Per cent. deficient (of whole).....	Year.	No. of Class.....	No. deficient.	Per cent. deficient (of whole).....
1883.......	12	......	...	1883.......	16	......	....
1884.......	12	......	....	1884.......	13	......	....
1885..	12	..	...	1885.......	18	......	...

SOPH'MORE CLASS—IN GEOME'RY.				FRESHMAN CLASS—IN ALGEBRA.			
Regular Members.				Regular members.			
Year.	No. of Class	No. deficient	Per cent. deficient (of whole).....	Years.	No. of Class.	No. deficient.....	Per cent. deficient (of whole).....
1883,......	32	5	16	1883.......	49	12	24
1884.......	29	4	14	1884.......	64	12	19
1885... ..	47	3	6¼	1885.......	76	4	5⅛

As will be seen by the above comparison, there has been a steady *increase* in the number of students in the Junior, Sophomore and Freshman Classes, and a steady *decrease* in the *number deficient*, showing a gradual elevation of the mental capacity of the students attending this College.

PROPERTY OF THE MATHEMATICAL DEPARTMENT.

On December 30, 1880, the following were bought of W. & L. E. Gurley, No. 514 Fulton St., New York:

ARTICLES.	1880. Value.	1885. Present Value.
1 Vernier Solar Transit	$211 00	$136 00
1 Theodolite and Tripod	125 00	80 00
1 Plane Table and Tripod	100 00	75 00
1 Vernier Compass and Tripod	45 00	30 00
1 New York Rod	16 00	10 00
1 Y Level	110 00	85 00
1 Case Mathematical Instruments	6 50	Lost.
2 Sets Loaded Pins (24)	6 00	4 lost and 20 left.
2 66-feet Steel Chain, bronzed	20 00	1 lost & 1 broken

The microscopes of the Theodolite and Transit, four pins, and the case of mathematical instruments, and one chain, were lost, and one chain broken, before I took charge of this department. The instruments have been in constant use in the Mathematical Department and out of it by the Professors of Agriculture and Horticulture at different times for the past five years, and are in good condition for that amount of service. The Theodolite and Transit have been sent on to New York to be repaired.

MEANS OF ILLUSTRATION.

Except in *Surveying*, there are in my department, *no means of illustration*.

RECOMMENDATIONS.

I respectfully recommended that the text-books in this Department be changed to the Wentworth Series of Mathematics; which has been done, to take effect as soon as practicable.

I respectfully also recommended that the Mathematical Department be furnished as rapidly as practicable with the following means of illustration, taken from the price-list of models for general instruction of the Polytechnic Working Institute, J. M. Schroder, Darmstadt, (1884,) Principal. They can be procured through Messrs. Eirmer & Amend, 205 Third Avenue, New York. For this purpose I ask that eight hundred dollars ($800) be appropriated. This is an Agricultural and *Mechanical* College, and yet there is *not a single* means of illustrating Mechanics here taught, and it is in the College course.

MEANS OF ILLUSTRATING MECHANICS.

Catalogue Number.	ARTICLES.	Catalogue Price.
1	The parallelogram of forces	20 to 50 Marks.
3	The bent lever	30 to 45 "
6	The inclined plane, with graduated arc and arrangement to make the force act parallel to the base	36 to 50 "
8	The screw	5 "
10	The endless screw	50 "
13	The apparatus for illustrating the laws of the wedge	12 to 25 "
15	Blocks and pulleys on stand	50 to 80 "
16	Apparatus for explaining laws of the lever	35 to 50 "
19	Simple windlass	20 "
21	Differential windlass	30 "
27	Apparatus for explaining the laws of stable equilibrium	24 to 35 "
30	Apparatus for explaining the law of equal transmission of pressure	250 "
38	Apparatus for showing parabolic motion of projectiles	25 "
39	Centrifugal machine to stand horizontal or vertical	30 "
42	Flattening of the earth	18 "
70	Bohenberger's apparatus for explaining the revolution of the earth on its axis	27 "
72	Gyroscope, after Fessel, with counterpoise of 7½ cms	30 "
386	Crank handle and axle	15 "
492	Chain pulley with single groove	34 "
801	Breast wheel constructed of timber	175 "
805	Overshot wheel constructed of timber,	180 "
830	Low pressure turbine wheel with guide blades	430 "
867	Independent wharf crane	150 "

MEANS OF ILLUSTRATING CIVIL ENGINEERING.

1020	Portion of house corner with frame work,	14 Marks.
1021	A. Frame work of simple beams	27 "
1022	B. Frame work of crossed beams	
1023	C. Frame-work of crossed beans with furry	
1000	Single timber connections, 1 to 73, Schroder's collection	116 "
1001–1005	Double beam construction	62 "
1033	Simple shed roof, height—length	14 "

1034	Simple shed roof with collar beams.....	15	"
1037	Shed roof height—¼ length..........	16	"
1038	Roof truss height—⅛ length....... ...	26	"
1052	Vertical roof truss with single collar braces with collar beam	26	"
1300–7	Various stone facings and joints..	5	"
1342	Door and window semi-circle arch......	11	"
1349–50	Elliptical and parabolic arch	14	"
	Models of simple key and queen post bridge and roof connections.		
1450	Seventeen training ditches of different kinds on model for draining meadow lands	53	"
1480–5	Securing embankments and dams......	—	"

These models are very expensive, and the above list is an exhaustive one and probably beyond the present ability of the State, but I respectfully and earnestly request that, as many as can, be furnished the Mathematical Department, which at present is behind all others in equipment, be given to the extent of the $800 requested, which will fit out the Mechanical Department very fully with models.

IN CONCLUSION.

The students, as a body, in my Department are more earnest and are making better progress than at at any time during my connection with it. The grade of students is better and the standard of recitation marks is higher.

To the constant attention to individual cases when laggard, and the giving of punishment by the President for failures in recitations, and frequent reports for visiting in the dormitory during study hours, are due, in my opinion, the present attention to study, excellent progress and consequent contentment of the students.

I am under obligation to all my assistants for the conscientious and able manner in which they have performed their duties in my Department.

Expressing my appreciation of the assistance given in my Department, and for his uniform courtesy and kindness in our official intercourse with the President, I am,

Very respectfully, your ob't serv't,

WM. L. BUCK,

Acting Professor of Mathematics.

REPORT ON DEPARTMENT OF HORTICULTURE.

Gen. S. D. Lee, President A. and M. College:

DEAR SIR—The following report of the Department of Horticulture from the time I took charge, September 22, 1884, to date, November 25th, 1885, is respectfully presented.

I found the Department in possession of about one hundred acres of land, including the grounds about the Professors' houses and the College buildings, the whole lying in one body at the eastern extremity of the College farm. Most of the undergrowth had been removed from the groves in the vicinity of the buildings, and a part of the campus was sown down in grass. The greater portion of the open land was poor, broken, and in an untillable condition. Much work, however, had been done in the way of filling gullies, clearing off rubbish, plowing and ditching. Some of the land was in condition to bring fair crops. Several thousand trees, plants, and vines were growing in permanent orchards and in the nursery. Owing to the severe and protracted drouth of 1884, the fall garden was almost a failure. The supply of garden seeds and implements and food for teams was limited.

During the fall months of 1884, and the mild winter weather following, students assigned to this department spent their working hours in thinning out the groves, and preparing them for grass, grading about the building and ditching, planting trees and vines, grafting and budding nursery stock, constructing hot-beds and cold-frames, hauling wood's mold, preparing compost, etc. The spring of 1885 opened with the regular work of the garden, the orchard, and the nursery.

Instruction in Horticulture embraces the regular lectures of the class-room, together with such illustrations and works of reference as bear directly on the subjects under consideration; also the information given the student in field work.

Instruction in class room is as follows: Junior class, first term, lectures on the selection of soils and location of orchards, nurseries, gardens, and ornamental grounds; manures, their sources. preparation, and application, certain soils and plants; the construction of propagating houses, cold-frames and other appliances for forwarding early garden plants; the propagation of trees, shrubs and vines, farm seeds, layers and cuttings; crossing and hybridizing; grafting and budding; pruning and training; the best methods of harvesting and putting up fruits and vegetables for home use, of gathering, packing, and shipping to distant markets.

Senior Class, third term, Economic Entomology. With but few appliances for forwarding early garden plants, we attempted last spring to grow only a sufficient number for the College garden. Having more than was needed, ready sale was found for the surplus. Cold weather was protracted till late; but, since the first early vegetables were ready for the table, the students and officers of the College have been furnished with an uninterrupted supply of garden products. Quite a nice supply is now being harvested for winter use.

The College Nursery (not yet a very extensive one), has done well this season. The trees, plants, and vines are strong, healthy, and of good size. Orders are being received daily for nursery stock, and we hope to realize quite a handsome profit on the money invested.

Strawberries, raspberries, and other small fruits promise well. From 2½ acres, planted early last spring, were picked several bushels of choice fruit. Later 2½ acres more were planted. The five acres produced during the summer a sufficient number of young plants to plant five acres more. A new planting of four acres has just been completed. Other plantings will follow shortly. The raspberries (¾ of an acre) planted last spring have made an excellent growth, and promise a fine yield next season. We hope to increase the area in small fruits to fifteen or twenty acres.

A few of the oldest orchard trees bore some fruit this season; a part of which was used on the grounds, the rest shipped to market. Several shipments of vegetables were made during the summer.

So far, the work done in the Horticultural Department has been largely one of preparation for success in future. The means appropriated to the Department, together with the proceeds received from time to time from it, have been expended as judiciously as was possible.

The policy I have adopted, and to which I shall adhere so long as I am connected with this institution, is not to cultivate broad acres for the sake of show; but, on the contrary, to demonstrate to the students, and to those interested in our work, what may be accomplished by proper management on small areas.

In general terms, as may be seen by referring to the valuation of College property made by the Committee of Appraisers, the Department of Horticulture is equipped as follows: Permanent improvements, including teamster's house, stable, store room, cold-frames and such, $500.00; four mules, $500.00; implements, $290.00; growing crops and produce, $428.00; orchards, and nursery stock, $5,390.00. The five acres just planted in strawberries, and a small house just finished for the protection of plants during winter, were not included in the above appraised property. The least cost of plants, preparation of land, and setting out four acres in strawberries, is $160.00; cost of house, $55.00. Total valuation of property, $7,033.00.

There are planted on the grounds some 250 ornamental trees. The orchard contains 1,250 apple, 2,000 peach, 500 pear, 300 plum, 375 mulberry, 20 Japanese persimmon, and 30 apricot trees. The vineyard contains 1,000 vines, six hundred trees, apple, peach and pear, were planted in 1882. Seventeen hundred trees, principally apple, mulberry, and ornamental, in 1883. Two hundred grape vines were put out in 1883; eight hundred in 1885.

Taking care of the campus and the ornamental grounds is a part of the Horticultural work. The grounds are being planted in our native grasses, and such others as promise well in this section. Bermuda grass, orchard grass, blue grass, and clover, carpet the premises about the buildings.

Students are required to labor three hours each day. Excepting the work done by two teamsters (whom it is necessary to have, in order to keep the teams employed during the whole day) all the work in the Department has been done by the students. They plant, cultivate, and gather the vegetables of the garden. They do all the work of laying off, planting, and pruning, the orchard and vineyard. In the nursery they learn by actual practice the art of budding, grafting, packing, and shipping nursery stock.

The Horticultural interest in the South is increasing rapidly; especially is this the case in Mississippi. Her soil and climate are admirably adapted to the growth and perfection of fruits, flowers, and vegetables. Her geographical position gives her many shipping advantages which the adjoining States do not possess. At the New Orleans Exposition, Mississippi won more prizes on fruit than did any other Southern State. Her apples, peaches, and pears, took many premiums over those of the North and West. She also took premiums on oranges. Mississippi ships one hundred bushels of fruits and vegetables now where she shipped ten five years ago. Extensive commercial orchards and gardens are being dotted all along her lines of railroad. Fifteen years ago to attempt to send such tender fruits as the strawberry, raspberry, and blackberry, to Chicago, was thought a foolish thing. To-day they go from Mississippi by the carload. Cars are now made that will carry these fruits a distance of 1000 miles, and open them upon the market almost as fresh as when taken from the field. In the near future it will require a long train of cars daily to move the Horticultural products of Mississippi to market. These statements are not magnified in the least. They are made to show you the beginning of Mississippi's achievements in this industry.

I claim that Horticulture should in Mississippi stand second to no other industrial pursuit; that its future is as bright, and its practice as elevating, as beneficial, and as lasting, as is that of any other branch of agriculture. I believe it is in accordance with the spirit of this institution, and with the wishes of its patrons, that a first-class commercial nursery be established here; that a propagating house, and other appliances for forwarding trees, shrubs, flowers and early garden plants, for home use and for market. be constructed and put in operation, that the garden, orchard, and vineyard, should furnish fruits and vegetables, both fresh and dried, not only for the students and officers of the College, but also for market.

But the Horticultural interest cannot be developed in a day. It requires capital, diligent labor, and time, to stock a nursery with choice and valuable varieties of trees, vines and plants; to make a good paying garden soil; to bring orchards into full bearing. Failure need not be apprehended if the plan is well formed, and each step carefully taken. I think we are progressing in the right direction, and as rapidly as our means will allow. With more capital to invest in a propagating house, nursery stock, and a proper building for keeping fruits and vegetables our work would be much more satisfactory.

I shall endeavor to do what I can with the means given me, to make the Horticultural Department what it should be, to make its study a mental discipline for the student as well as an attractive employment.

The garden, orchard, nursery and ornamental grounds once well equipped, and in good running order, the expenses of the Department will be nominal when compared with the profits.

With these aids, it will not be difficult to show the student what there is in the science and art of Horticulture. The student himself will combine theory and practice, and when he leaves College, will be well fitted to pursue intelligently any branch of this industry in a practical, business like manner.

To conclude: much of the success of this Department is due to the support given it by the Honorable Board of Trustees, and President, and it is to you, Mr. President, that I owe a debt of gratitude for your encouragement, and your willingness to hold up my hands whenever it was within your power.

Very respectfully submitted,
A. B. McKAY,
Acting Professor of Horticulture.

REPORT OF INSTRUCTOR IN BOOK-KEEPING.

A. AND M. COLLEGE OF MISSISSIPPI,
Nov. 28th, 1885.

Gen. S. D. Lee, President:

DEAR SIR—In accordance with your instructions I hereby submit my report as Instructor in Book-keeping:

In this Study the Freshman Class is instructed during the last term about three months. We endeavor to teach Book-keeping practically, as far as we are able, during the very limited time given to the subject. Last session we had seventy students in Freshman Class, which required it divided into three sections. The students were much interested in the subject and made very satisfactory progress. The text-book used is Bryant & Stratton's. While the time devoted to the subject is too limited to give a thorough course, still, with diligence and application a student can obtain a practical knowledge of the subject, as is evidenced in the fact that several students who attended here, and without any other instruction, are now successful book-keepers in the State.

Respectfully submitted,
T. F. WATSON,
Instructor in Book-Keeping.

REPORT OF A. ZUCKER.

DEPARTMENT OF MECHANICAL AND FREE HAND DRAWING.

Gen. S. D. Lee, President:

SIR—I have the honor to submit to you herewith the Fourth Annual Report of the operations of the Department of the Mississippi Agricultural and Mechanical College under my charge.

The work has since the date of my first report been highly satisfactory and encouraging to me. Several causes have contributed to make it so, and have, also, given this branch an acknowledged standing among the departments of the College.

The department is well equipped with small tables and stools to admit double the number of students in former years, and has also a sufficient number of model drawings, both for mechanical and free-hand drawing.

The most urgent and imperative need of the department is a large andwell-lighted room to accommodate the increased number of students in the Junior and Sophomore classes. The room used in former years proved to be entirely too small for the purpose, and the College library has partly been assigned to the department this year.

Following is the statement of attendance in the classes during the terms:

FIRST TERM—MECHANICAL DRAWING.

Junior Class	19
Sophomore Class	31

SECOND TERM.

Junior Class	Free-Hand Drawing.

A great number of students have been taking every year an enthusiastic interest in the work of the department, and made a success in copying farm buildings of the College, and also in map drawing. Despite the disadvantages of room, etc., the general progress of students in both classes has been satisfactory, and the samples of the students' work sent to the Exposition at New Orleans have showed that this department has as good results as those of institutions of the same kind.

Many superior drawings are often willingly given to the department by students, and these I intend to frame, using them as samples and guides to future students.

I hope to be able to add to the courses of mechanical and free-hand drawing those of crayon drawing, painting in water-colors, and modeling in clay, and thus bring the department up to the standard of similar departments of other Colleges.

It is my endeavor to add to the equipment of the department, as much from year to year, as are, in the judgment of the Board of Trustees, wise expenditures.

Very respectfully submitted,
ADOLPH ZUCKER, C.E.,
Instructor in Drawing.

Mississippi Agriculture and Mechanical College, Nov. 25, 1885.

REPORT OF LIBRARIAN.

A. & M. COLLEGE, MISSISSIPPI,
November 23, 1885.

Gen'l S. D. Lee, President:

DEAR SIR: I have the honor to submit the following report as Librarian of the Agricultural and Mechanical College of Mississippi, covering the period that has elapsed since my appointment, by resolution of the Faculty, December 3, 1883.

The work in the Library is performed by a student appointed by the President and Faculty, but is done under the direction of the Librarian, who makes, with the sanction of the Faculty, such rules and regulations for the government of the affairs of the Library as he deems expedient.

During the remainder of the session of 1883-'4 which elapsed after my appointment to the place of Librarian, I had an inventory taken of all books and property belonging to the Library. I had all the books re-numbered and re-arranged: duplicate lists, in alphabetical order, were made, giving both the title of each book and its author. One of these lists has been placed in the Reading-room for the convenience of the students and others desiring to get books from the shelves.

Students taking books from the Library give a receipt for the same, and before the Secretary settles with any student leaving College, either during the session or at its close, the student is required to furnish a certificate to the Secretary that there are no charges on account of lost books, or on account of damage to Library property against the student leaving.

Monthly reports are required of the student-librarian, and these, when necessary, are laid before the President, who, when he thinks proper, refers them to the Faculty for their action.

The number of bound volumes now belonging to the Library is two thousand, three hundred and thirty-six (2,336), 136 volumes having been added by purchase or donation since Dec. 3, 1883. A majority of the bound volumes consists of donations from the different departments of the General Government, and from our State government, such as reports of the Fish Commission, reports of the Bureau of Education, etc. The number of volumes belonging to the scientific and literary departments of the College is one thousand, one hundred and eighty-seven (1,187), of which only five hundred and sixty-eight (568) volumes belong to the literary department.

These figures show the limited supply of reading matter offered to the large number of students now in attendance upon the instruction given here. I reiterate here what I said in my report of the Department of English: there is a great deficiency of works illustrative of the different periods of English literature, and almost a total absence of historical works, charts, etc. Biography—that portion of history so attractive to the young—is not represented at all in our list of books. I recommend that the Legislature be asked for such a sum as will purchase those books most needed to illustrate the growth of our language, and also for an additional sum to purchase such a collection of histories, biographies, historical maps, charts, etc., as shall give to our students the same advantages that students of other institutions of the same grade as ours possess.

The whole amount expended for the Library, excluding periodicals for the Reading-room, and including furniture, books, maps, etc., as shown by the books of the purchasing agent, is two thousand, forty-four dollars and thirty-four cents ($2,044.34). This does not show the full value of the Library, since the donations from the General Government, the State government, agricultural colleges, and other institutions are, in many cases, very valuable. As an instance of valuable donations, the volumes embracing the census of 1880 may be cited; so that I may safely say that our Library is worth three thousand, five hundred dollars ($3,500), although appraised at cost in the inventory of College property.

The Reading-room is furnished with the best periodicals from the metropolitan press, by purchase; and the generosity of the the press of this State furnishes almost every student with his home paper free of charge. In this connection, I desire, in behalf of the students and officers of the A. & M. College, to tender thanks to the proprietors of the many State papers that are found weekly upon the tables of our Reading-room.

Finally, in order that our Library should develop as the wants and needs of our students increase, there should be a stated sum annually available for the purchase of books.

The above report and suggestions are respectfully submitted.

W. H. MAGRUDER, Librarian.

PREPARATORY DEPARTMENT.

Gen. S. D. Lee, President:

SIR—In compliance with your instructions, I have the honor to submit the following report of the Preparatory Department during the time in which I have had it in charge. Owing to the fact that my appointment as Principal dates only from last June, this report is necessarily more general and prospective in its nature than it would otherwise have been.

DESIGN.

The design of the Preparatory Department is, as its name indicates, to give such thorough instruction in the elementary branches as will enable students to enter the College classes well prepared for an intelligent and profitable pursuit of the studies prescribed in the regular course. In some colleges, such a department is considered burdensome and objectionable; but in this institution such is not the case, for it is here considered a necessity. The majority of the students who enter this College come from country districts where the common schools are few and inferior, and the school term entirely too short. The consequence is, a large proportion of them are not sufficiently well prepared to enter the Freshman class. Should they then be turned away from this, the only place at which, perhaps, they could gain an education? Had such a policy been adopted in the beginning, many of the best students in the present College classes would have been turned from our doors; and that class of our citizens for whose especial benefit the College was established, would thus, to a great extent, have been deprived of its privileges. Realizing this, the Legislature in the act prescribing the powers granted to the Board of Trustees required of them, "the establishment of a first-class institution, at which the youth of the State may acquire a *common school education*, and a scientific and practical knowledge of agriculture, horticulture, the mechanic arts, etc." Thus owing its existence to the same law by which the other Departments were established, the Preparatory Department here is not considered an unnatural outgrowth, but rather as an important part in one grand whole. It was organized because it was needed; and, in supplying a great need, it has proved that, in connection with the other Departments, it is an unfeigned blessing.

COURSE OF STUDY.

The course of study in this Department requires two years for its completion. In the Junior year, or lower grade, the following subjects are taught: Rudiments of English Grammar and Composition, Reading and Spelling, Practical Arithmetic, Penmanship, and Declamation. The studies of the Senior year are: English Grammar and Composition, continued, Higher Arithmetic, Algebra, Analysis, U. S. History, Penmanship, and Declamation.

In addition to these studies, by a resolution of the Board of Trustees at their last meeting, instruction in Agriculture will be given to Preparatory students this year. This instruction will be given by graduates of the College who are now assistants in the Preparatory Department. Supplementary lectures will be delivered before the classes by the Professors of Agriculture and Chemistry. By this means, Agriculture, the distinguishing feature of the College, will hereafter be taught from the lowest to the highest class in it.

ORGANIZATION.

As indicated above, the Department is divided into two distinct grades: the Senior, or higher grade; and the Junior, or lower grade. One hundred and twenty students have up to date, been admitted into the higher grade; which is divided into four sections, according to the average class standing of students therein. Sixty students have been enrolled in the Junior, or lower grade, which is divided into three sections, in like manner as the upper grade. The entire Department is thus taught in seven sections numbering in all one hundred and eighty students.

INSTRUCTORS.

Thinking that three assistants would be sufficient for the Department this year, the Board of Trustees at their meeting last June reappointed Messrs. J. H. Logan and J. M. White, as assistants. and gave the third place to Mr. L. B. Reid. But the number of students entering the Department at the opening of the session was so great that I was compelled to ask for more help. The President straightway secured the services of Messrs. B. Irby and W. L. McGee, making in all five assistants; one of whom, however, Mr. White, is engaged half his time with the Freshman class. To compensate partly for this loss of help, Mr. J. J. Huggins, assistant in the Agricultural Department, teaches for me one hour each day.

These young gentlemen are all graduates of this College, thoroughly imbued with the spirit of the institution, and deeply interested in its welfare. They are all earnest and diligent in the discharge of their duties; ever ready to receive suggestions, and to aid me in any way.

SUPERVISION.

Realizing the importance in school work of thorough, systematic supervision, I have, with the approval of the President, taken regular charge of but two classes, in order that I may devote as much of my time as possible to this important part of my duty as Principal. This supervision is performed by daily visiting the rooms of my assistants, sometimes hearing their classes for them; and by frequently exchanging my own regular classes with them. Besides, I hold weekly with these instructors what might be called teachers' institutes. At these meetings, we discuss the progress made by classes and individuals, the best methods of teaching the subjects then before us, the proper management of classes, and other subjects of interesting and profitable nature connected with our work.

APPARATUS.

The Department is well supplied with blackboards, maps, and globes, all of which are in constant use.

But to one need in this line, I would here call your attention. In order to teach the metric system of weights and measures successfully, a set of apparatus is necessary; and I now remind you of this necessity, hoping that you can make arrangements to procure the needed apparatus before the session closes.

CONCLUSION.

In conclusion, Mr. President, it gives me pleasure to add that the Preparatory Department is now in a flourishing condition. The attendance of students upon recitations is excellent; a studious, energetic spirit seems to pervade the entire Department;

deportment is good; and I have every reason to believe that thorough work is being accomplished.

Respectfully submitted,
DABNEY LIPSCOMB,
Principal Preparatory Department.
A. AND M. COLLEGE, MISS., Nov. 15, 1885.

REPORT OF WRITING MASTER.

AGRICULTURAL COLLEGE, MISS.,
November 23, 1885.

Gen. S. D. Lee, President:

DEAR SIR: As Penman, I would report that during the two past sessions only the Freshman and Preparatory classes received instruction in my Department—something near two hundred students each session—improvement was usually good, with some few exceptions.

During the two past months of this session, some two hundred and sixteen students have been in attendance, which number is about as many as we can well accommodate in the room that we have at present. Besides these, there are a great many students who have been excused on account of insufficiency of room.

Preparatory classes practice writing from the Common School Series, and study the theory of penmanship.

Freshman classes write from the Business Series, and practice Roman letters, Italics and Free-hand Script.

Considering the fact that we are so badly crowded, we are starting off this session as well, if not better, than in any previous one. Discipline is very good, and students are generally disposed to learn.

We are in great need of a larger and better equipped room.

If it is not out of order just here, I will suggest that Short-hand and Type-writing might very easily be added to this Department, and with very little extra expense.

Respectfully submitted.
W. H. GIBBS, Penman.

REPORT OF SURGEON.

A. & M. COLLEGE, MISS.,
November 25, 1885.

Gen. S. D. Lee, President:

SIR: I have the honor to make the following report, in regard to the duties that devolve upon me as Surgeon of the College.

First, I have to act as Sanitary officer; second, to meet the students at my office every morning at 7:30, and grant excuses to those that are unable, on account of sickness, to perform the duties of that day. My office hours are from 7:30 to 8:30 a. m., and from 1:30 to 2:30 p. m. I am to decide when the peculiar state of the weather requires, in the interest of health, the cessation of any duty to be performed by, or required of the students; to look into the subject of diet at Mess Hall; also to do whatever else is required of me, as health officer, by the President. I am paid a fee of five dollars ($5.00) for each student that matriculates; the said fee is collected of the students. The sanitary condition of the place is perfect under the present system. There is no possible chance for the soil, and thereby the water, becoming contaminated with poisonous gases or germs emanating from the offal, and other necessary filth that would follow so large a number of students as we have here. There is a well trained nurse at the hospital, whose duty it is to be with the sick all the time, and to carry out my directions in giving medicine and looking to the diet, etc.

The hospital stands upon the best drained site on the grounds, with a gradual slope from all sides. The building is well constructed, and arranged with four (4) large rooms, capacitated for six (6) beds each, and has good fire places. Also four small r ooms, all of which are furnished with bedsteads and other necessary furniture including a gasoline stove for the purpose of warming food for the sick, heating water, etc. I am satisfied with the present facilities; the sick students here get every attention any one could wish for. In fact, when I first took charge, it was a difficult matter to get the students to the hospital, but now they are glad to go there, and seem to consider it more of a home than a hospital.

The health of the students is better than it has ever been, notwithstanding we have more in attendance.

Respectfully submitted.

W. H. BARR, Surgeon.

STEWARD'S REPORT.

A. & M. COLLEGE MISS.,
November 28, 1885.

Gen. S. D. Lee, President:

I respectfully submit the following report of the Steward's Department:

BUILDING.

We have a large and comfortable building, with sufficient room for three hundred and fifty students. Also, a large store room, kitchen, and room for bake oven; two-story, with society rooms overhead.

OUTFIT.

One large range and fixtures, one large bake oven, dining room fixtures, tables, chairs, sufficient crockery ware for three hundred students, also wagon and team for hauling.

SUPPLIES.

Supplies are purchased to the best advantage, at the end of each month. Board is charged to students at actual cost. Price of board for the last two sessions has averaged $8 50. While the fare is plain, every effort is made to have good, substantial food. We give the students fresh beef, mutton, pork and bacon, vegetables in season, coffee, tea and milk.

It should be remembered, that in the amount paid for board is included hire of servants for sweeping halls of dormitory, the cost of servants and extras for hospital, also the oil used by students.

The department is in good working order and well equipped.

Respectfully submitted,

P. G. LUCAS, Steward.

REPORT OF STATE CHEMIST.

To Gen. S. D. Lee, President of Mississippi A. & M. College:

By the Act of the Legislature, your Professor of Chemistry is State Chemist, and is required to analyze all of the fertilizers sold in the State. This work has been carried on as required by law, and I have endeavored to attend to it promptly and with the greatest possible care. So far as I know, the analyses have been satisfactory to the interested parties—at least as much so as can ever be expected so far as the manufacturers and dealers are concerned. There are certain parties who are never satisfied with their certificates of analysis; most of whom, I believe, are in the business to give as little fertilizer to the farmers for the money paid for it as they can.

This is now the fourth year that I have analyzed the fertilizers in this State, and I have found the mass of the manufacturers dealing in the State to be thoroughly upright gentlemen, disposed to be liberal towards our farmers, and recognizing that it is necessary to the protection of honest dealers, as well as of the farmers, that the fertilizers sold in the State should be genuine.

I have been forced, in the discharge of my duties, to come into unpleasant relations with some of the manufacturers, and especially was this the case with the firm of J. F. Brannon & Co., of Atlanta, Ga., whom I was forced to handle through the papers of the State in the following notice:

"BRANNON'S SOLUBLE GUANO.

"A SHARP PLAN TO BEAT THE FARMERS OUT OF SOME MONEY.

"MR. EDITOR: Will you have the kindness to let the farmers of the State know through the columns of your paper the following facts, of special interest to those who have invested in fertilizers or expect to do so?

"The brand known as 'Brannon's Soluble Guano,' manufactured by the firm of J. F. Brannon & Co., of Atlanta, Ga., has been sold in some portions of the State upon false and dishonest representations. This firm has used two forms of advertisements, both gotten up in a manner to lead the intending purchaser to think them the work of the official chemist. The one that is official gives the valuation as $32.74. The one that they have used almost entirely gives it as $36.39 per ton. In the fraudulent certificate they give the analysis of a sample sent here by them last year for official analysis, but directly under my name, without comment, they give a valuation of their own, raising the commercial valuation above that assigned by the official analysis, at the same time making a chance to escape a possible prosecution for forgery, and leading any one reading the certificate to suppose that it is all my work.

"The attention of the farmers of the State is particularly directed to this firm, and if any of them have been victimized by their tricks, it will afford me pleasure to do all in my power to assist them to protect themselves as the law provides.

"It is unfair to honest dealers and manufacturers to let such attempts at fraud go unnoticed, and I hope that this attempt will meet with proper reward.

JOHN A. MYERS,
"State Chemist of Mississippi.

"AGRICULTURAL COLLEGE, Sept. 23, 1885."

Several other cases have been dealt with in a more quiet way, and one case is now pending in the U. S. Court at Jackson.

As was to be expected in such instances, some bitterness has been manifested upon the part of certain firms which have not been able to carry everything their own way, but the State will be better off if they should be driven out of it entirely.

The farmers of the State are taking much greater interest in the security of their investments in fertilizers than heretofore, and I have met with warm encouragement from them. I have endeavored to attend to all of the work, both for the manufacturers and for the farmers, with as much dispatch as possible, and we now have our laboratory arranged with special reference to the rapid analysis of fertilizers, so that in future we shall be able to push the work through very rapidly.

The fertilizers annually sold in the State amount to about 10,000 tons, from the best information at hand. This, at the average price, amounts to about $335,000, the larger part of which goes out of the State. There are only five fertilizer factories in the State. The fertilizers come from as far east as Boston, and from points in distant parts of the country, making it a surprise that more is not manufactured in our own State, thus preventing the outward drain of such a large amount of capital. It would certainly pay our own citizens to engage much more extensively in the business, and it is to be hoped they will do so, as our cotton seed meal is one of the best materials in the market for mixing ammoniated superphosphates. Every cotton seed oil mill at least in the State would find this one of the best means of selling their meal and ashes, and I hope that they will give it the attention which it deserves. It would open a fine field for home industry, and will undoubtedly prove profitable. With a rigid system of fertilizer inspection farmers will soon learn to have confidence in fertilizers, and their sale in this State can be increased to very large amounts, which will conduce to greater prosperity to all classes.

There has been, and I fear there is still some fraud being perpetrated, which under our law it is difficult or impossible to check. The farmers complain that they do not get to see the certificate of analysis, which, by the law, should be publicly exposed by the agents, but from my correspondence, I apprehend they quietly suppress it in many cases, and by one false representation or another, avoid punishment. Again, some manufacturers print or advertise upon their packages of fertilizers that they guarantee their goods to contain available phosphoric acid, from say 7 per cent to 14 per cent., nitrogen, or ammonia, from say 1½ per cent. to 4½ per cent., and potash, from say 1 per cent. to 4 per cent. In other words, they guarantee their fertilizer to be worth, at current prices, anywhere from about $20 00 to about $48 00 per ton. This variation has no excuse, and should be suppressed, as it is intended to confuse and swindle the farmer in most cases. I think that the manufacturer should be allowed to print but one set of figures upon his packages, and those should be his absolute guarantee. There will necessarily be a slight variation in the chemical composition of fertilizers due to moisture, if to nothing else. But the manufacturer should keep the grade of his goods such that he can make an absolute guarantee below which they will not fall, and if they do he should be liable.

The fertilizer trade, and the farmers would be much more secure if all fertilizers sold in this State should be required to be above a certain grade, say 8 per cent. available phosphoric acid, 2 per cent. of nitrogen, and 1 per cent. of potash, for ammoniated super-phosphate, and let the minimum be 10 per cent. available phosphoric acid in acid phosphates. This limit is easily reached and should be attained by every manufacturer, while it will also in a measure protect the farmer.

Actual fraud may be perpetrated in any of the following ways:

1st. Manufacturers may make the whole bulk of their goods, say a car load, below grade, in which case it is easily detected.

2d. They may mix packages of poor goods with others of high grade, which is hard to detect, and if detected renders it difficult to convict, as they can too frequently throw doubt upon the work of the chemist. The difficulty in this case is very great. The provisions made for the analysis of fertilizers by law usually being so very limited, that a chemist can seldom undertake to go through the series of analysis necessary to run down a case of this kind.

3d. The farmer may be deceived by the false representations of the agent who sells the fertilizer.

During the past year I have had occasion to meet with instances of all three of these in this State, and I believe that there is a disposition in some cases to attempt it still further, notwithstanding the experience of some of the parties in the courts. The whole system of fraud, however, in fertilizers, can be completely stopped if the people of the State are willing to take hold of it with proper energy. It need not be very expensive either, as I have found the majority of manufacturers who are honest, ready and willing to assist in its suppression, and it is to the interest of all to have a more stringent system of inspection.

THE METHOD OF ANALYSIS.

We use in all of our analyses the methods adopted by the Association of Official Agricultural Chemists of the United States, which have been generally adopted by the official chemists of the country, and are the most reliable known. Our work is checked with that of other State chemists, by series of the analyses made by mutual agreement among the members of the above named Association, for the sake of self-protection of the official chemists, and for the better security of accurate work for the various States in which they have control of the fertilizer analyses.

THE VALUATION OF THE FERTILIZERS.

We adopt prices based upon the best information at our command, with regard to the actual cost of fertilizers in the State, and while they may not represent the actual price demanded at some points in the State, yet I would advise farmers to purchase fertilizers that can be had for this price or less, as this gives to the manufacturers a very handsome profit.

The price adopted was 12½ cents per lb. for available phosphoric acid, 20 cents per lb. for nitrogen, and 7 cents per lb. for potash.

The value of the fertilizer per ton is arrived at by multiplying the number of lbs. of each ingredient per hundred as indicated by the per centage composition by 20, and this product by the price per lb., and adding these products together; for example, take a fertilizer as Green's Royal C. Brand.

Contains Available Phosphoric acid:—	
10.36 per cent.x20=207,2x12½	$25 90
Contains Nitrogen .... 1.98 per cent.x20=39,6x20.......	$ 7 92
Contains Potash ...... 3.54 per cent.x20=70,8x7........	$ 4 95
Total value per ton of 2,000 lbs..........................	$38 77

The following table gives the comparative chemical composition and relative commercial value of the forty-three brands sold in the State, during the season of 1884-'85:

NAME OF BRAND.	Moisture........	Potash..........	Nitrogen........	Equivalent to Ammonia....	Soluble Phosphoric Acid...	Reverted Phosphoric Acid........	Total available Phosphoric Acid........	Insoluble Phosphoric Acid........	Valuation per ton of 2,000 pounds........	MANUFACTURERS' NAMES.	MANUFACTURERS ADDRESS.
Texas Bat Guano..	11.52	0 53	2.92	3.55	0.42	6.41	6.83	8.33	$29 49	Alexander Conacher...	San Antonio, Tex.
Ammoniated Dissolved Bone..............	10.85	1.23	2.34	2.84	5.75	3.34	9.08	3.34	33 38	N. W. Fertilizer Company........................	Chicago, Illinois.
Sunny South Acid Phosphate............	....	....	....	....	6.15	3.65	9.80	3.08	24 50	J. M. Green..	Atlanta, Georgia.
Brannon's Soluble Guano.................	12.80	2.98	2.63	3.20	6.00	1.22	7.22	4.76	32 74	J. F. Brannon & Co..	Atlanta, Georgia.
Eddystone Soluble Guano.................	11.75	1.98	1.87	2.27	6.69	2.29	8.98	3.06	32 70	J. M. Green..	Atlanta, Georgia.
Raw Bone Cotton and Sugar Grower......	10.85	1.84	2.34	2.84	6.65	2.21	7.86	4.61	33 08	Rogers & Dameron..	New Orleans, La.
Standard Fertilizer..............................	15.00	2.35	3.09	3.76	4.66	2.31	6.97	2.11	33 07	Columbus Oil Mills..	Columbus, Miss.
Brown's Cotton and Corn Fertilizer......	8.99	2.23	1.20	1.45	10.40	2.56	12.96	1.52	40 52	Rob. B. Brown Oil Company..........................	St. Louis, Missou'i.
Sterne's Ammoniated Raw Bone Superphosphates..	8.95	2 31	2.45	2 95	5.61	6 70	12.31	1.72	43 80	Sterne's Ferlilizer and Chemical Co..........	New Orleans, I a.
"Acid Phosphate"...........................	....	....	....	....	14.41	1.50	15.91	2.19	39 72	Sterne's Fertilizer and Chemical Co..........	New Orleans, La.
Pure Ground Bone............................	....	....	3.98	†52.89	‡ 4.74	....	24.23	....	40 00	Sterne's Fertilizer and Chemical Co..........	New Orleans, La.
Rock City Superphosphate.................	9.05	1.23	2.30	2.79	8.02	1.97	9.99	2.41	35 89	The National Fertilizer Company...............	Nashville, Tenn.
Baker's Standard Guano....................	12 60	1.74	1.81	2.20	6.21	1.92	8.13	4.53	29 99	Chemical Company of Canton......................	Baltimore, Md.
"Plow" Brand Raw Bone Superphosphate	12.60	2.89	2.22	2.69	6 95	2.99	9 94	2.63	36 47	Walton, Wham & Co...	Baltimore, Md.
Reliance Superphosphate..................	12.50	2.39	2.16	2.62	6.22	2.82	9.04	3.40	34 48	Walton, Wham & Co...	Baltimore, Md.
Stono Acid Photphate.........................	10.75	1.07	....	....	9,44	3 27	12.71	1.72	33 26	Stono Phosphate Company........................	Charleston, S. C.
Genuine German Kinnete....................	....	13.76	*25.44	....	....	....	....	....	19 26	Stono Phosphate Company........................	Charleston, S. C.
"Phosphate Floats"...........................	8.00	....	....	....	†58.11	....	....	26.62	None.	Stono Phosphate Company........................	Charleston, S. C.
Stono Dissolved Bone.....	13.80	....	....	....	12.62	.92	13.54	1.26	33 85	Stono Phosphate Company........................	Charleston, S. C.
Stono Soluble Guano............................	13	1.20	2.17	2.53	5.35	2.05	7 40	4.82	28 86	Stono Phosphate Company........................	Charleston, S. C.
Soluble Sea Island Guano................. ..	9.27	2.55	1.98	2.41	6.22	1.94	8.16	3.92	31 89	The Raisin Fertilizer Company.....................	Baltimore, Md.
Tennessee Phosphate............................	9	1.28	1.90	2.31	7.86	2.77	10.13	2.13	34 71	The National Fertilizer Company...............	Nashville, Tenn.
Acid Phosphate...................................	10.75	....	....	....	11.12	.84	11.96	4,18	29 90	The National Fertilizer Company.......	Nashville, Tenn.
Soluble Pacific Guano..........................	13.85	1.92	2 28	2.77	7.93	.89	8.82	4.26	33 85	Pacific Guano Company..........	Boston, Mass.
Americus Ammoniated Bone Superphosphate..	14.15	.62	2.34	2.84	7.09	3.05	10.14	1.02	35 57	Fleming D. Tinsley...	Selma, Alebama.
Georgia State Grange Fertilizer...........	10.11	1.43	2.04	2.48	6.94	2.37	9.37	2.95	33 43	Baldwin & Co..	Savannah, Ga.
Standard Home Mixture Guano...........	8,20	2.74	2.19	2.65	9.43	1.48	10.91	1.69	89 86	Meridian Fertilizer Factory.........................	Meridian, Miss.
Lister's Standard..................................	12.80	1.26	2.16	2.62	6.29	1.82	8.11	4.28	30 67	Baldwin & Co..	Savannah, Ga.
J. Merryman & Co.'s Dissolved Bones...	15.82	1.53	1.66	2.02	7.25	1.83	9.08	3.48	31 48	J. Merryman & Co..	Baltimore, Md.
Farish Farman's Formula......................	12.80	4.52	....	....	7.78	1.80	9.58	2,68	30 27	Farman's Farm Improvement Company...	Atlanta, Georgia.

Farman High Grade Guano	12.80	1.98	2.14	2.60	8.97	1.43	10.40	2.97	$37 33	Farman's Farm Improvement Company	Atlanta, Georgia.
Buffalo Bone Guano	12.07	2.39	2.01	2.41	7.42	1.24	8.66	2.73	33 10	Farman's Farm Improvement Company	Atlanta, Georgia.
English Acid Phosphate	....	....	....	....	10.23	1.78	12.01	.57	30 02	N. H. Holmes	Montgomery, Ala.
Atkinson's Pelican Cotton and Corn Grower	....	1.26	2.51	3.05	5.33	4.49	9.82	2.00	36 35	N. W. Fertilizer Company	Chicago, Illinois.
Chalmette Mills Ammoniated Superphosphate "C"	8.50	2.87	1.75	2.13	5.79	4.69	10.48	0 62	37 21	Chalmette Mills	New Orleans, La.
Good Luck Guano	14.98	1.00	2.34	2.84	6.59	3.44	10.03	2.75	35 83	R. J. Ruth	Baltimore, Md.
"Kainite"	....	* 13.1	24.	....	....	....	....	....	18 34	Sterne's Fertilizer and Chemical Co.	New Orleans, La.
Dissolved Bone	12.70	....	....	....	12.49	1.88	14.37	2 27	35 92	The Meridian Fertilizer Factory	Meridian, Miss.
Potts' Cotton and Corn Grower	8.25	1.16	3.01	3.66	6.56	5.13	11.69	1.87	42 88	N. W. Fertilizer Company	Chicago, Illinois.
Knickerbocker Phosphate	10.85	1.23	2.34	2.84	5.74	3.34	9.08	3.34	33 38	N. W. Fertilizer Company	Chicago, Illinois.
National Bone Dust	10.85	1.23	2.34	2.84	5.74	3.34	9.08	3.34	33 38	N. W. Fertilizer Company	Chicago, Illinois.
"Homestead"	12.80	....	2.40	2.91	10.03	.52	10.55	1.38	35 97	Michigan Carbon Works	Detroit, Michigan.
Royal "C" Brand	7.98	3.54	1.98	2.41	3.58	6 78	10.36	1.08	38 77	A. A. Green	Jackson, Miss.

* Suphate of Potash. † Bone Phosphates.

I have been asked by a number of farmers, and also by a number of the manufacturers to call the attention of our legislators to several changes needed in our law in order to better secure all parties from imposition. As to exactly what changes must be made, if any, I feel that this should be left to the wisdom of our law-makers; but the following points should be covered, in a good law.

The quality of the fertilizers placed upon the market, should be guaranteed after they enter our State, which can only be accomplished by a more rigid system of inspection. This should be done in a manner that will not interfere with the legitimate operation of the business. The chances of suppressing fraud should be made as simple as possible, and when guilty parties are found, the penalties should be sufficiently severe to make it probable that the same parties would not attempt it again. The interests of honorable dealers should be protected as well as those of honorable purchasers, and last of all the chemist should be paid enough to live upon, and not be liable to the freaks of party passion, or to be placed in such a position as at present, where he is liable to be crushed in the legitimate discharge of his duties. If it be not too presumptuous, I think this may all be accomplished by slight modifications and additions to our present law.

There may be other items which will occur to our legislators when they give the matter their consideration, but these are the most prominent that have been brought to my notice.

To yourself, and also to the Honorable Board of Trustees of the Mississippi A. & M. College, I am under lasting obligations for favors and kindness shown to me in providing necessary apparatus, etc., for the successful execution of the law.

Respectfully submitted,
JOHN A. MYERS,
State Chemist.
Nov. 24, 1885.

LAWS OF CONGRESS RELATING TO THE COLLEGE.

AN ACT, donating public lands to the several States and Territories which may provide Colleges for the benefit of agriculture and the mechanic arts.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there be granted to the several States, for the purposes hereinafter mentioned, an amount of public land, to be apportioned to each State a quantity equal to thirty thousand acres for each Senator and Representative in Congress to which the States are respectively entitled by the apportionment under the census of eighteen hundred and sixty. *Provided,* That no mineral lands shall be selected or purchased under the provisions of this Act.

SEC. 2. *And be it further enacted,* That the land aforesaid, after being surveyed, shall be apportioned to the several States in sections, or subdivisions of sections not less than one quarter of a section; and whenever there are public lands in a State subject to sale at private entry at one dollar and twenty-five cents per acre, the quantity to which said State shall be entitled shall be selected from such lands within the limits of such State; and the Secretary of the Interior is hereby directed to issue to each of the States in which there is not the quantity of public land subject to sale at private entry at one dollar and twenty-five cents per acre, to which said State may be entitled under the provisions of this Act, land scrip to the amount in acres for the deficiency of its distributive share; said scrip to be sold by said State, and the proceeds thereof applied to the uses and purposes prescribed in this Act, and for no other use or purpose whatever; *Provided*, That in no case shall any State to which land scrip may thus be issued be allowed to locate the same within the limits of any other State, or of any Territory of the United States, but their assignees may thus locate said land scrip upon any of the unappropriated lands of the United States subject to sale at private entry, at one dollar and twenty-five cents or less per acre; *and provided further*, that not more than one million acres shall be located by such assignees in any one of the States; *and provided fvrther*, that no such location shall be made before one year from the passage of this Act.

Sec. 3. *And be it further enacted*, That all the expenses of management, superintendence and taxes, from date of selection of said lands previous to their sales, and all expenses incurred in the management and disbursement of the moneys which may be received therefrom, shall be paid by the States to which they may belong, out of the Treasury of said States, so that the entire proceeds of the sale of said lands shall be applied without any diminution whatever to the purposes hereinafter mentioned.

Sec. 4. *And be it further enacted*, That all moneys derived from the sale of the lands aforesaid by the States to which the lands are apportioned, and from the sales of land scrip hereinbefore provided for, shall be invested in stocks of the United States, or of the States, or of some other safe stocks, yielding not less than five per centum upon the par value of said stocks; and that the moneys so invested shall constitute a perpetual fund, the capital of which shall remain forever undiminished (except so far as may be provided in fifth section of this Act), and the interest of which shall be inviolably appropriated by each State which may take and claim the benefit of this Act, to the endowment, support and maintenance of at least one College, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, and in such manner as the Legislatures of the States may prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.

Sec. 5. *And be it further enacted*, That the grant of land and land scrip hereby authorized shall be made on the following conditions, to which as well as to the provisions hereinbefore contained, the previous assent of the several States shall be signified by legislative acts:

1. If any portion of the fund invested as provided by the foregoing section, or any portion of the interest thereon, shall by any act or contingency be diminished lost, it shall be replaced by the State to which it belongs, so that the capital of the fund shall remain forever undiminished; and the annual interest shall be regularly applied without diminution to the purposes mentioned in the fourth section of this Act, except that a sum not exceeding ten per centum upon the amount received by any State under the provisions of this Act may be expended for the purchase of lands for sites of experimental farms whenever authorized by the respective Legislatures of said States.

2. No portion of said fund, nor interest thereon, shall be applied directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings.

3. Any State which may take and claim the benefit of the provisions of this Act, shall provide within five years at least not less than one College, as described in the fourth section of this Act, or the grant to said State shall cease; and said State shall be bound to pay the United States the amount received of any lands previously sold, and the title to purchasers under the State shall be valid.

4. An annual report shall be made regarding the progress of each College, recording any improvements and experiments made, with their costs and results, and such other matters, including State and industrial statistics, as may be supposed useful; one copy of which shall be transmitted by mail free by each to all the other Colleges which may be endowed under the provisions of this Act, and also one copy to the Secretary of the Interior.

5. When lands shall be selected from those which have been raised to double the minimum price, in consequence of railroad grants, they shall be computed to the States at the maximum price, and the number of acres proportionally diminished.

6. No State, while in a condition of rebellion or insurrection against the Government of the United States, shall be entitled to the benefit of this Act.

7. No State shall be entitled to the benefit of this Act unless it shall express the acceptance thereof by the Legislature within two years from the date of its approval by the President.

SEC. 6. And be it further enacted, That land scrip issued under the provisions of this Act shall not be subject to location until after the first day of January, one thousand eight hundred and sixty-three.

SEC. 7. And be it further enacted, That the land officers shall receive the same fees for locating land scrip issued under the provisions of this Act as are now allowed for the location of military bounty land warrants under existing laws; *Provided*, That maxmum compensation shall not be thereby increased.

SEC. 8. And be it further enacted, That the Governors of the several States to which scrip shall be issued under this Act, shall be required to report annually to Congress all sales made of such scrip until the whole shall be disposed of, the amouut received for the same, and what appropriation has been made of the proceeds.

Approved, July 2, 1865.

LAWS OF THE STATE RELATING TO THE COLLEGE.

AN ACT to establish and organize Agricultural and Mechanical Colleges, and to regulate the government of same.

WHEREAS, Section 8 of Article VIII of the Constitution provides that the Legislatures shall, as soon as practicable, provide for the establishment of an Agricultural College or Colleges, and shall appropriate the two hundred and ten thousand acres of land donated to the State for the support of such a College by the Act of Congress, passed July 2, A. D., 1865, or the money or scrip, as the case may be, arising from the sale of said lands, or any lands which may hereafter be granted or appropriated for such purposes; and

WHEREAS, The State having accepted said lands and pledged its faith to appropriate the same to the endowment of said institutions of learning; therefore,

SECTION 1. Be it enacted by the Legislature of the State of Mississippi, That the institution known as the Alcorn University is hereby established as, and declared to be, an Agricultural College, for the education of the colored youth of the State, and to be hereafter known as the Alcorn Agricultural and Mechanical College of the State of Mississippi.

SEC. 2. Be it further enacted, That an Agricultural College is hereby established for the education of the white youth of the State of Mississippi, and shall be known as the Agricultural and Mechanical College of the State of Mississippi, and shall be located and organized as hereinafter provided.

SEC. 3. Be it further enacted, That the Governor of the State shall nominate and appoint, by and with the advice and consent of the Senate, nine persons for each of said Colleges to be Trustees, to serve six years, one for each of said Colleges, to be chosen from each Congressional District, and the remainder from the State at large; five of each Board of Trustees shall be chosen from practical agriculturists or mechanics, or selected from both, as may be deemed advisable, Immediately after they shall be assembled, in consequence of their first appointment, they shall be divided equally into three classes. The term of the first class shall expire two years from the date of their appointment, and the second class four years from the date of their appointment, and the third class at the expiration of six years, so that one-third may be chosen every second year; and if vacancies happen by resignation or otherwise, the Governor may make temporary appointments until the next meeting of the Legislature. The Governor shall be *ex-officio* a member of each of said Boards of Trustees, and shall act as President thereof in all of their meetings when present, but in his absence they may choose a President *pro tem.* Five of the Trustees of each Board shall be a quorum for the transaction of business.

SEC. 4. Be it further enacted, That the Secretary of State shall furnish a certificate to each Trustee within ten days after his appointment, notifying him that he has been so appointed; and if any Trustee fail for the space of thirty days to inform the Governor of his acceptance, then his appointment shall be void, and his place filled as heretofore provided in cases of vacancy.

SEC. 5. Be it further enacted, That each of the Boards of Trustees herein provided for, and their successors in office, be and the same are hereby declared to be a body politic and corporate by their respective names and styles, and shall have a common seal, and each in his own name shall sue and be sued, contract and be contracted with, and may own, purchase, sell and convey property, both real, personal and mixed.

SEC. 6. Be it further enacted, That the Governor shall, as *ex-officio* President, convene the Board of Trustees of either of said Colleges, to consider any business connected with the same, whenever he shall deem it expedient to do so.

SEC 7. Be it further enacted, That the Trustees of each College shall elect a Secretary of the Board, whose duty it shall be to record in a well-bound book all the proceedings had by said Board, and shall be allowed such compensation for his services as the Board may deem proper.

SEC. 8. Be it further enacted, That the State Treasurer shall be *ex-officio* Treasurer of both Boards of Trustees, whose duty it shall be to secure and safely keep all moneys belonging to the Agricultural and Mechanical Colleges, and to disburse the same under the orders of the Boards of Trustees.

SEC. 9. Be it further enacted, That each of said Boards of Trustees shall possess all the power that is necessary and proper for the accomplishment of the trust reposed in them, viz: the establishment and maintenance of a first-class institution, at which the youth of the State of Mississippi may acquire a common school education, and a scientific and practical knowledge of agriculture, horticulture and the mechanic arts; also of the proper growth and care of stock, without, however, excluding other scientific and classical studies, including military tactics. They may also adopt all such by-laws and regulations as they may deem necessary for that purpose, not repugnant to the Constitution and laws of this State or of the United States.

SEC. 10. Be it further enacted, That the Board of Trustees shall appoint the President and Professors of the College, and such other officers as they may think proper to put the College into successful operation, and shall make such laws, rules, and regulations for the government of said officers as they may deem advisable. They shall regulate the course of study, rates of tuition, management of the experimental farm, the manner of performing labor and the kind of labor to be performed by the students, together with the course of discipline necessary to enforce the faithful discharge of the duties of all officers, professors and students.

SEC. 11. Be it further enacted, That the Trustees to be appointed as hereinbefore provided, shall receive as compensation for their services their actual expenses incurred in attending any of the meetings of the Board of Trustees, payable out of any funds belonging to the College.

SEC. 12. Be it further enacted, That the said Board of Trustees shall organize under the provisions of this Act as soon as practicable after their appointment, and the Trustees of the Agricultural and Mechanical College of the State of Mississippi shall, immediately after their organization, proceed to procure, by purchase or donation, a site for the location of the said Agricultural and Mechanical College, with an experimental farm thereto attached of not less than one hundred and sixty acres of land. In the selection of the said site and experimental farm, the Trustees shall look to the convenience of the people of every section of the State, the proximity of the proposed site to other public institutions supported in whole or in part by the State, with a view to giving the preference to localities least favored heretofore, and also the facilities for going to and from said College, the advantages and disadvantages of the different sites proposed, and shall locate the same at the place where most advantages are offered; *Provided*, The location shall be at a place known to be healthy; *and Provided*, That said Trustees shall give notice for sixty days in three newspapers published in this State, that they will receive proposals and examine sites before locating said College.

SEC. 13. Be it further enacted, That the interest arising from the proceeds of the fund known as the agircultural land scrip fund is hereby set apart for the use and benefit of said Agricultural and Mechanical College, to be used in equal proportions for the benefit of the youth of both races and Colleges, and shall be drawn from the Treasury by the Board of Trustees on vouchers audited by the Board and approved by the Governor, and filed in the Auditor's office, and upon the filing of such vouchers the Auditor of Public Accounts shall draw his warrant on the State Treasurer for the same from time to time, as funds may be needed to pay the officers and professors of said Colleges, or for any other necessary and proper object connected with the said Agricultural and Mechanical College not inconsistent with the Act of Congress, approved July 2, 1862.

SEC. 14. Be it further enacted, That in order to establish financial equality in all respects between the Colleges herein provided for, a sum equal to the amount heretofore appropriated to the

Alcorn University out of the principal arising from the sale of said land scrip, is hereby appropriated to the College provided for in section two of this Act, and the Trustees thereof shall be authorized to use the same in carrying out the provisions of this Act for the benefit of said College not inconsistent with the Act or Acts of Congress donating the same.

SEC. 15. Be it further enacted, That this Act take effect and be in force from and after its passage.

Approved, Feb. 28, 1878.